

THE
PRACTICAL BUILDER,
OR
WORKMAN'S GENERAL ASSISTANT;

Shewing the most Approved and Easy METHODS for DRAWING and
WORKING the Whole or Separate Part of any BUILDING;

AS
The USE of the TRAMEL for GROINS, ANGLE-BRACKETS, NICHES, &c.
Semi-circular ARCHES on Flewing Jambs, the Preparing and Making their SOFFITS.

RULES OF CARPENTRY;

To find the LENGTH and BACKING of HIPS, Straight or Curved.—TRUSSES for
ROOFS, DOMES, &c.—TRUSSING of GIRDERS, SECTIONS of FLOORS, &c.

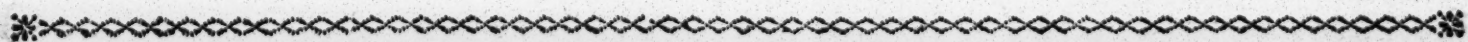
The PROPORTION of the FIVE ORDERS, in their General and Particular Parts.—GLEWING
of COLUMNS, STAIR-CASES with their Ramp and Twist RAILS;
Fixing the CARRIAGES, NEWELS, &c.

FRONTISPIECES, CHIMNEY-PIECES, CIELINGS, CORNICES, ARCHITRAVES, &c. in the Newest
Taste.—With PLANS and ELEVATIONS of GENTLEMENS' and FARM-HOUSES,
YARDS, BARNs, &c.



A New Edition, Revised and Corrected by the Author

WILLIAM PAIN, ARCHITECT and JOINER.



ENGRAVED ON EIGHTY-THREE PLATES.

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P R E F A C E.

CONsidering the Number of Books on the Theory and Practice of Architecture already published, any further Effort to illustrate and familiarize this MOST NOBLE ART, may seem superfluous and unnecessary; in me especially, who, by two former Publications, endeavoured to advance the young Practitioner in the Knowledge of his Profession.

But as Art is improving, greater Experience enables to discern the truly useful, and thereby to confirm or reject former Methods.

The very great Revolution (as I may say) which of late has so generally prevailed in the Stile of Architecture, especially in the decorative and ornamental Department, will evince the Necessity and eminent Utility of this Publication. That Taste (so conspicuous in our modern Buildings) which is vainly sought in any other practical Treatise, the Workman will here find illustrated in a great Variety of useful and elegant Examples.

The Deficiencies and confined Plans of those Books now used by Workmen, is another Inducement to collect together in one View; the most easy and certain Rules to carry on the Building Art. These are the Result of Experience, and by the Author long used in conducting Business, who now offers the Public a general practical Treatise, wherein his great Care has been plainly and faithfully to answer the Purpose of the manual Artificer: It is not meant to instruct the professed Artist, but to furnish the Ignorant, the Uninstructed, with such a comprehensive System of Practice, as may lay a Foundation for their Improvement, and thereby enable them to execute with ease and Precision, the various Branches of the Profession.

T H E

T A B L E O F C O N T E N T S.

Plate

- 1 — **N**ICHES, Elipfis, raising Perpendiculars, use of the Tramel, and how to make ditto, &c.
- 2 — Plan and Section of Groins, veneering Niches, &c.
- 3 — Circular Arches in a circular Wall, circle Arches, Soffits &c.
- 4 — Groins, Angle Brackets, Circular and flying Soffits.
- 5 to 9 Sections of Floors, Trussing Roofs in Ledgment, Girders, length and backing of Hips, strait and curved Trusses for Roofs, Domes, &c.
- 10 — Mouldings, Ballusters, &c.
- 11 — Inter Columnations
- 12 — Proportions of the Orders, Pedestals, &c.
- 13 — Tuscan Frontispiece, Base, Capital and Entablature.
- 14 — Doric ditto
- 15 — Ditto Entablature at large
- 16 — Ionic Frontispiece, Base, Capital and Entablature.
- 17 — Ditto Entablature at large.
- 18 — Modern Ionic Capitals and Volute at large.
- 19 — Gluing up ditto
- 20 — Antique Ionic Capital.

Plate

- 21 — Corinthian Pedestal and Base at large.
- 22 — Corinthian Capital and composed ditto
- 23 — Ditto Entablature.
- 24 — Antique Composite Capital.
- 25 — Composite Cap & Entablature.
- 26 — Planceers of Corners.
- 27 — Gluing of Columns.
- 28 — Impost
- 29 to 34 Frontispieces with their Entablatures, Moulding, &c.
- 35 & 36 Open Pediments and raking Cornices.
- 37 to 48 Chimney-Pieces with their Moulding and Ornaments.
- 49 — Mouldings for Pictures and Glass Frames
- 50 — Ornaments for Friezes, Pillasters, &c.
- 51 — Cornices for Doors, Chimnies, &c.
- 52 to 58 Bases, Sub-bases, Architraves, &c.
- 59 to 61 Cornices for Door-Caps, Chimney-Caps, Rooms, &c.
- 62 to 65 Ceilings, Frets, Guilloches, &c.
- 66 to 73 Stair-Cases.
- 74 to 83 Gentlemens Houses, Green-houses, Hot-houses, Stabling, Farm-houses, &c.

A TABLE for the Cutting of Timber for Building.

Bearing Post.

Height.	
If 8 Feet	9 Inch. square
— 10 —	10 by 9
— 12 —	11 — 12
— 16 —	14 — 15
— 20 —	16 — 18

Beams or Ties.

Length	Inches
12 Feet	7 by 8
16 —	8 — 9
20 —	9 — 10
30 —	10 — 11
40 —	12 — 11
50 —	13 — 12

Girder's Bearing.

If 10 Feet	10 by 9 In.
— 12 —	11 — 10
— 14 —	12 — 11
— 16 —	12 — 13
— 18 —	13 — 14
— 20 —	15 — 14
— 24 —	15 — 16
— 30 —	16 — 18

Small Rafters.

Bearing	Inches
8 Feet	5 by 3
10 —	7 — 3
12 —	8 — 4

Binding Joists.

Bearing	Inches
6 Feet	6 by 4
8 —	7 — 4
9 —	8 — 4
12 —	10 — 5

Principal Rafters.

Length	Botm.	Top.	Thick
From 12 to 16 Feet	8	6	5
From 16 to 20 —	9	7	6
From 23 to 24 —	10	8	7
From 24 to 30 —	12	10	9

Bridging Joists.

Whose Bearing should not exceed 5 Feet,
and scantling not less than 6 by 4.

Purlins from 8 by 5 to 9 by 7 or 10 by 8.

Raising Plates from 7 by 5 to 8 by 6, or
10 by 8.

Common Joist.

Bearing	Inches
6 Feet	6 by 3
9 —	9 — 3
12 —	12 — 4

Ground-fills the same as raising Plates.

To Face PLATE I.

Figure *A* and *B* are ribb'd NICHES for Plaistering.

THE Plan *a* is a Semi-Elipfis on the transverse Diameter, which is drawn with a Trammel as represented in the Plan, which is to be made with a Grove at Right Angles as in the Figure; two Pieces to be morticed to slip on the Rod, and one fixed at the End for a Pencil, &c. fix one of the Pieces equal to half the Conjugate Diameter, and the other to half the Transverse Diameter, and moving the Rod with the Pins in the Groves, the Pencil will describe the Semi-Elipfis.

To draw the Elipfis *c* to any given Length and Breadth, take half the Conjugate Diameter *ab* and set it on the Transverse Diameter *dc*, divide *ca* into three equal Parts, and make *ce* equal to one of those Parts, and with the Radius *ef* bisect *gg*. So the Points *ef* and *gg* are the Centres for drawing the Elipfis to any Length and Breadth.

To draw the Elipfis *d* with a Line, take half the Transverse Diameter *ba* and set it from *c* on the Conjugate Diameter to *d* on the Transverse Diameter, and to *e* on Ditto, then *ed* are the Points to be fixed for the Line to go round, which will describe the Elipfis with the Point *f*.

To glue the Head of a Nich as Figure *e*, cut the Arch Part of the Board or Stave to the Thickness of a Veneer, and bend it on a Templet, and back it to the Curve, it may be jointed the same as a Column, &c.

To describe a Polygon to a given Side from five to eight Sides, make a Radius of the given Side for the Pentagon, divide the Arch into five Parts, turn one down on the Line which is the Centre, to describe a Circle which will contain the Side five Times.

For a Hexagon, the Radius of the Side is the Centre.

The Heptagon into seven Parts and turn one up.

The Octagon into four and turn one up.

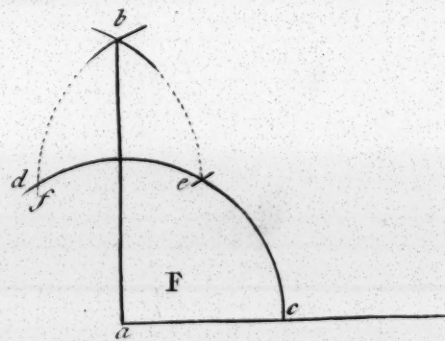
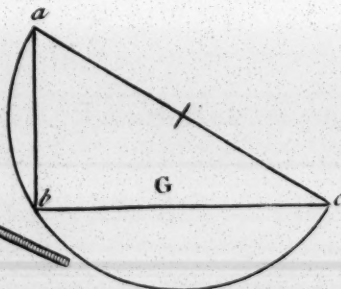
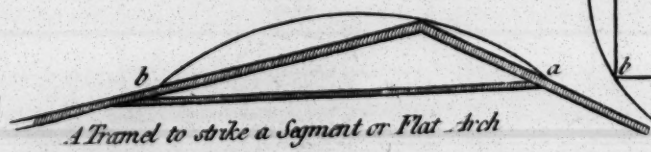
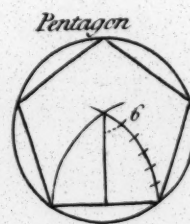
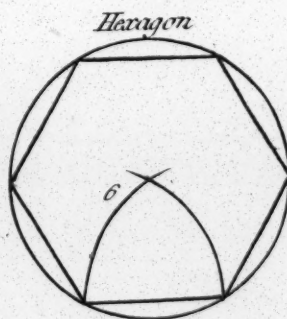
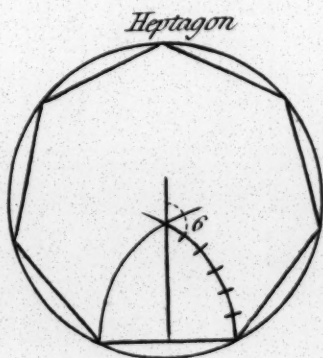
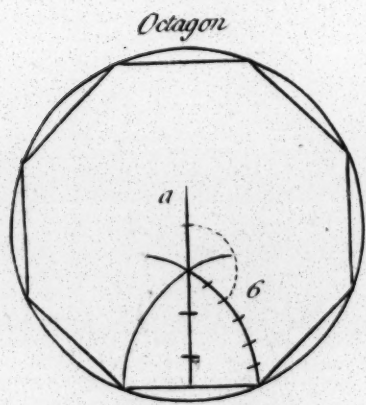
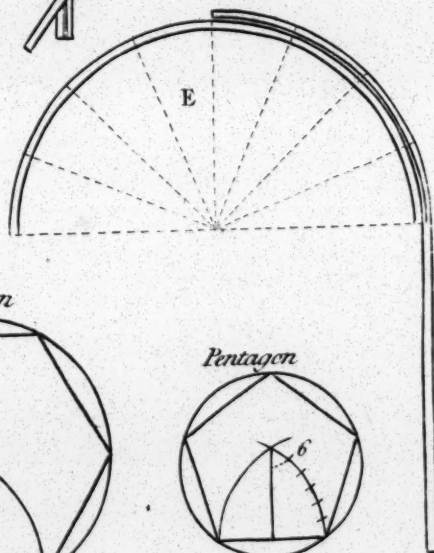
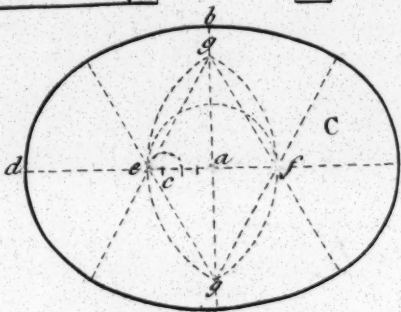
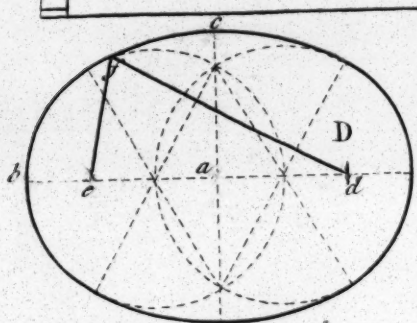
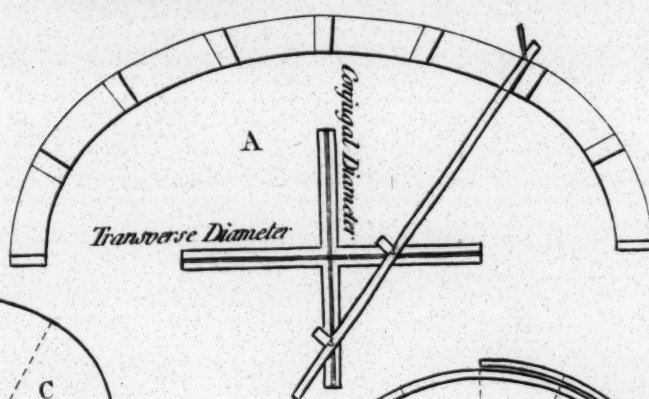
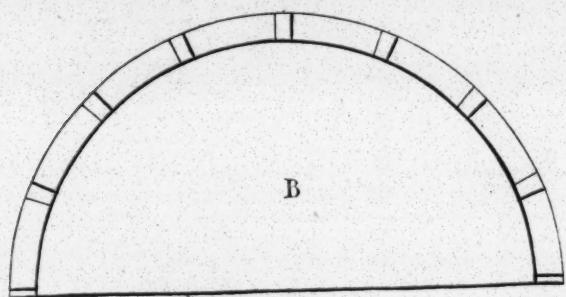
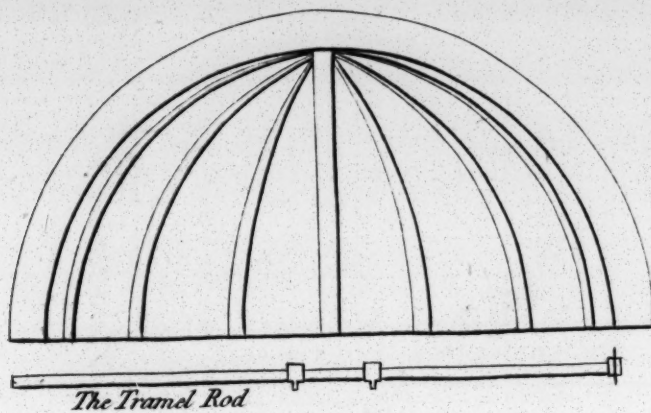
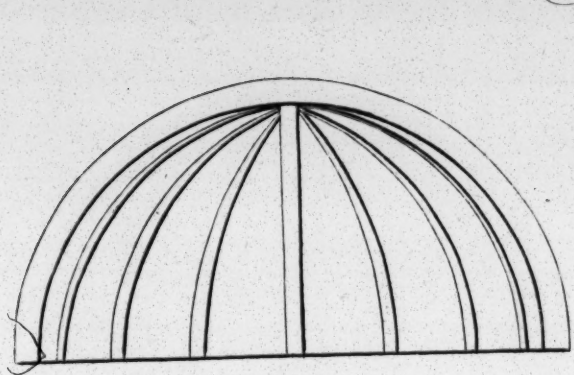
To raise a Perpendicular at the End or Middle of a Line. Describe the Arch *cd*, and with the Radius *ac* make *ef*, which bisect at *b*, gives the Perpendicular to *a*.

To let fall a Perpendicular from a given Point to a Base Line. Figure *G*; let *a* be the Point given to fall to the Base Line *bc*, draw a right Line from *a* at Pleasure to meet the Base Line as at *c*, more or less; divide the Line *ca* into two Parts, and draw the Semi-Circle *abc*, and where the Circle cuts the Base Line at *b*, which is at Right Angles with *a*, which was to be done.



Niches, Polygons, Trameles &c.

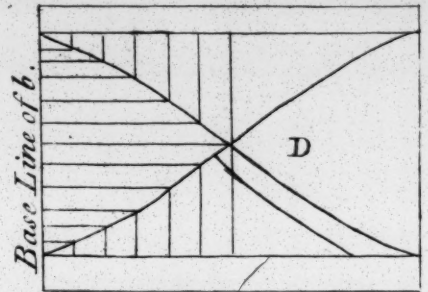
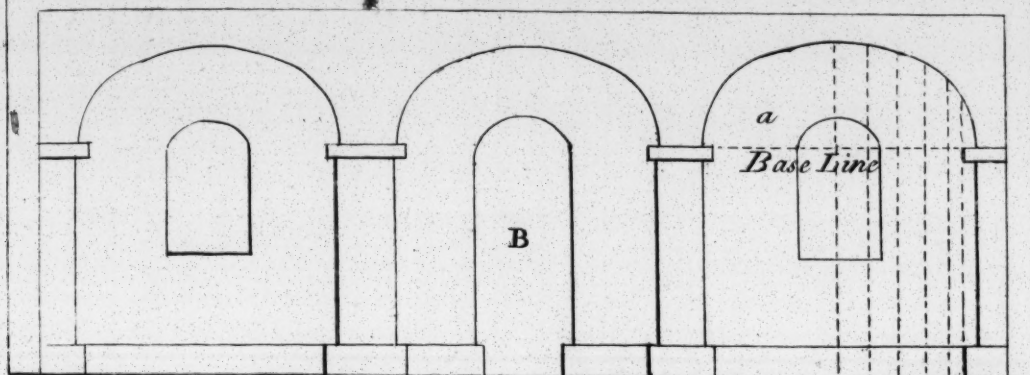
Plate I.





Plan & Section of Groins Finccring Niches &c.

Plate II.



The Arch line of a, Stretched out at length.

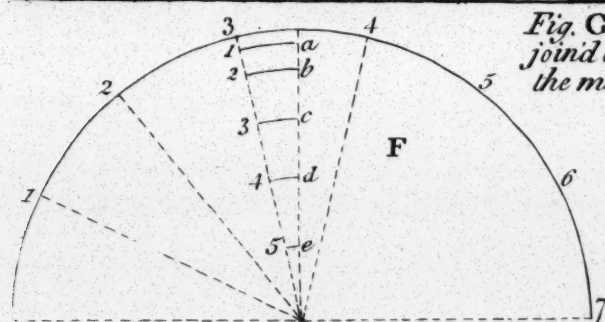
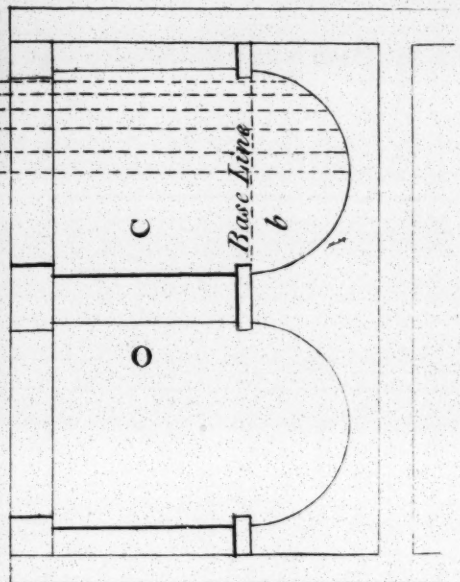
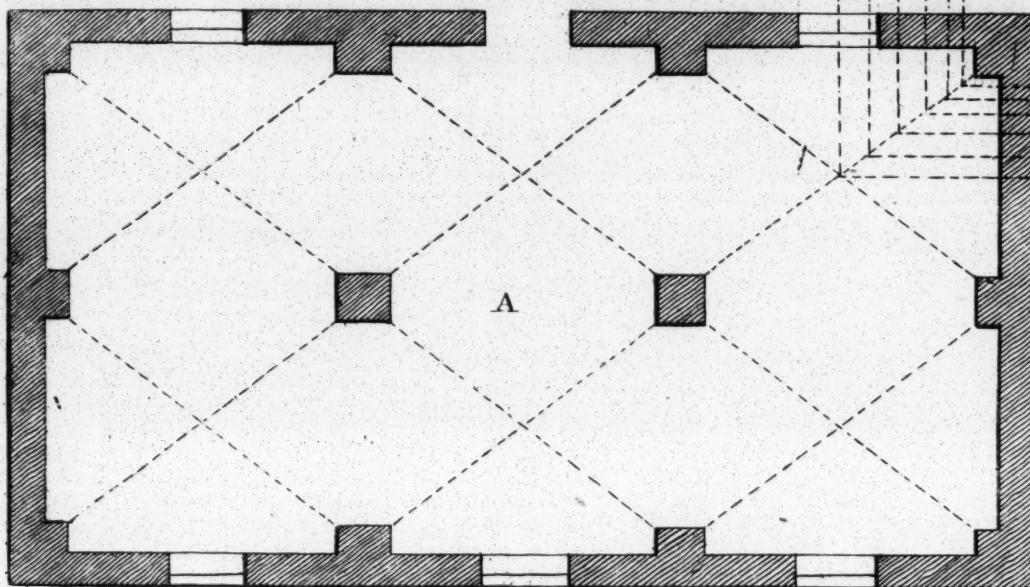
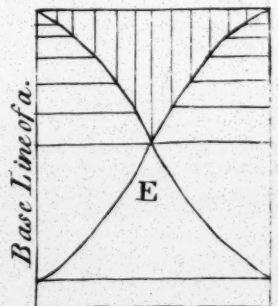
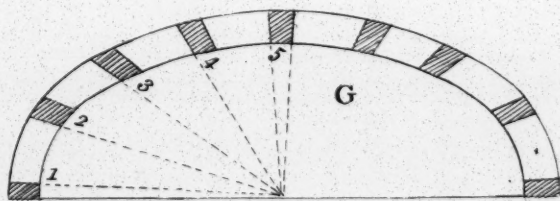


Fig. G, is a Ribb'd Nich for plaistering with the Ribs all joind to y place where to stand the Edges are Bevel so the mould must be shifted.



The arch line of b, Stretched out at length.

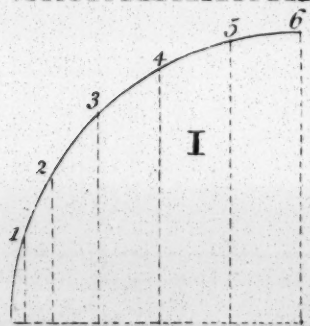


Fig. F, is a plan of Nich to be fineered H, is the finer stretched out at length from y Arch I. & 2 F, is y plan which y edges are traced from, which is plain to Inspect, but the more parts it is divided into the truer the Round, the plan is in 7 parts but in practice it may be into 15 parts or more at pleasure.

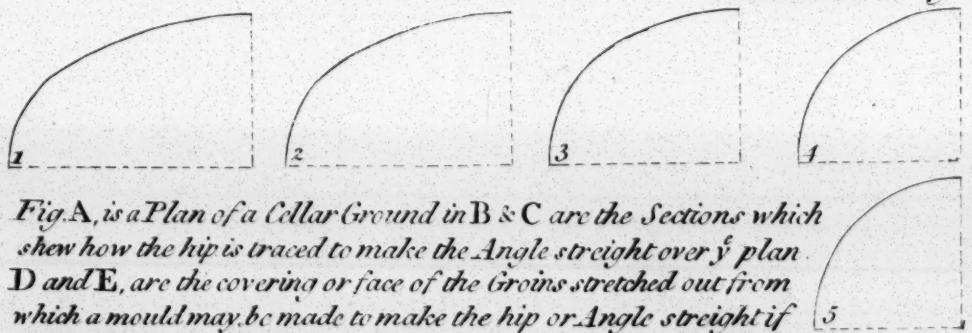


Fig. A, is a Plan of a Cellar Ground in B & C are the Sections which shew how the hip is traced to make the Angle streight over y plan. D and E, are the covering or face of the Groins stretched out from which a mould may be made to make the hip or Angle streight if the Ribs C, O, are set first & boarded in the mould must be taken from E, but if the Arches in Section B, be set first the mould must be taken from D.

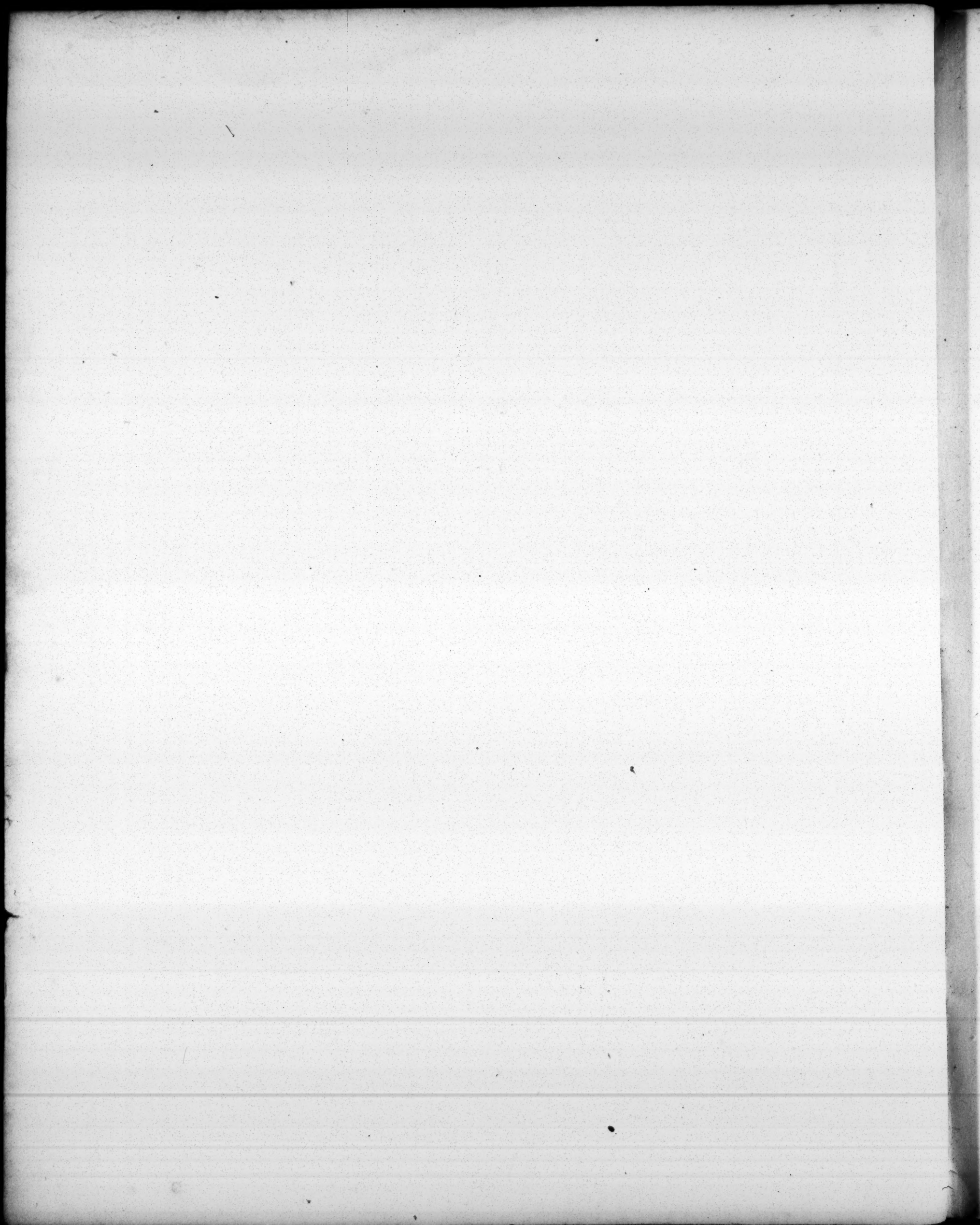


Fig. B. is an Arch standing on Flying Jambes in a Straight Wall and supposed to be a fair Arch in Stone or Brick. Divide the Round of the Arch in as many Parts as are Courses to Compleat the Arch and drop them to the Wall Line, then Draw them cross the Wall, Parallel with the Jambes, and that shews how much is to be Cut of the Face of each Course.

Circular Arches &c.
in a Circular Wall.

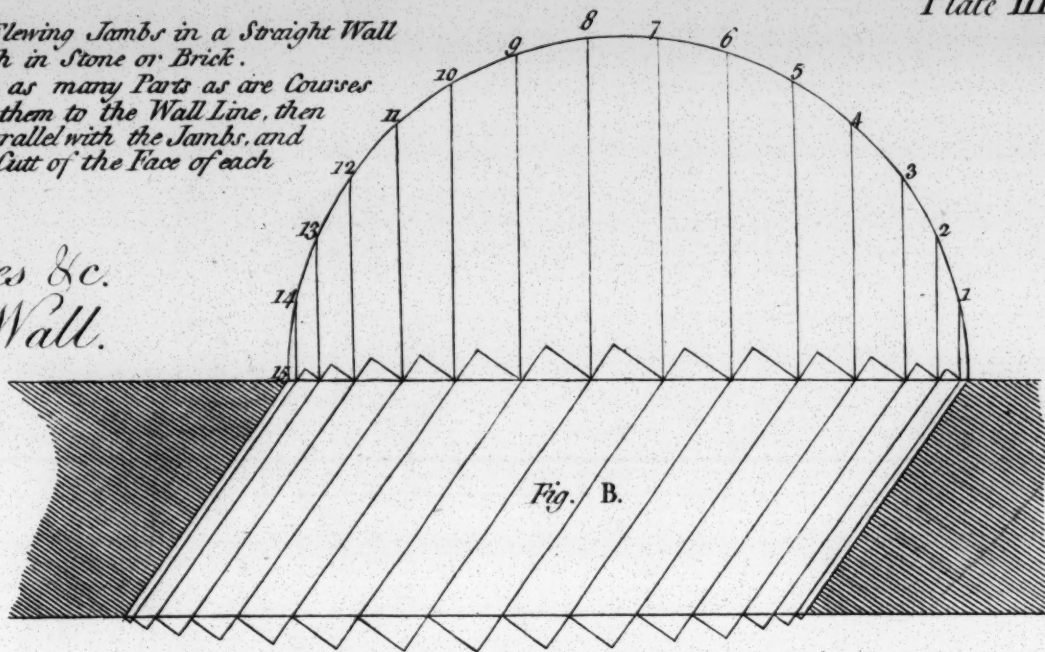
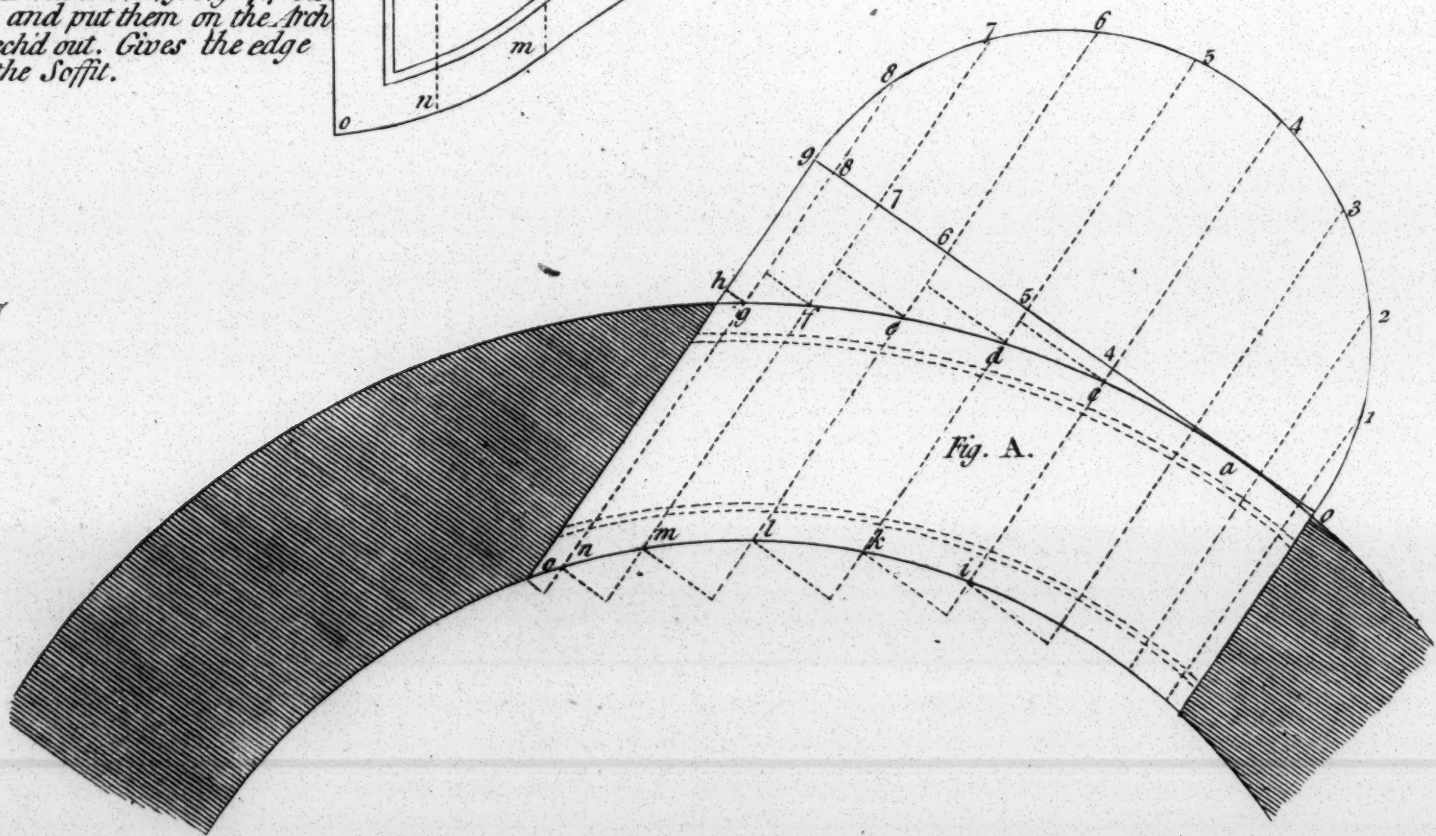
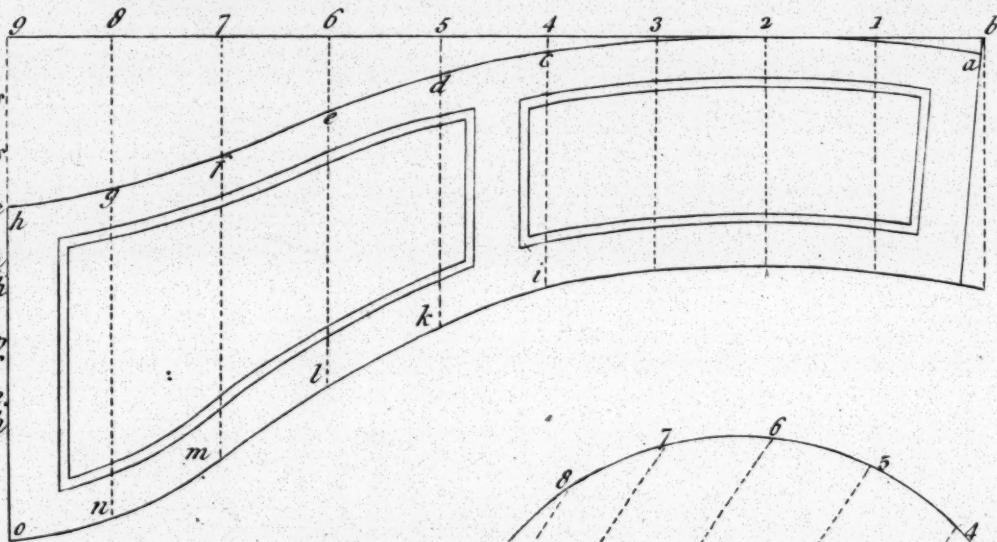


Fig. A. is a Circular Wall which has a Door or Window that stands Flying. Because the Jambes do not stand at Right Angles with the Diameter of the Circle, as in Plate IV find the Curve Line of the Soffit, in this Case draw the Cord Line or Base Line of the Arch, o, g at Right Angles with the Jambes o, h to touch the Arch of the Wall at a, and Divide the Arch into equal Parts and drop them to the Wall then take of the Distances, h, g, 8, g, 7, f, 6, e, &c. and put them on the Arch stretch'd out. Gives the edge of the Soffit.





To Face P L A T E IV.

Figure *A* is a P L A N to be G R O I N ' D.

D I V I D E the Base Line *a* of the given Rib into equal Parts, and that of *d* into the same Number of Parts, and draw Lines to the Arch Line of *a*, and likewise in *d* at Pleasure; then take 1, 2, 3, 4, 5, 6, &c. from *a*, and transfer them to *d*, as 1, 2, 3, 4, 5, 6, &c. and thro' the Point 1, 2, 4, 6, 8; trace the Arch Line over *d*, and so for the Rest, as is plain to Inspection. The Angle Bracket is done in the same Manner.

To describe a circular Soffit in a circular Wall, as in B.

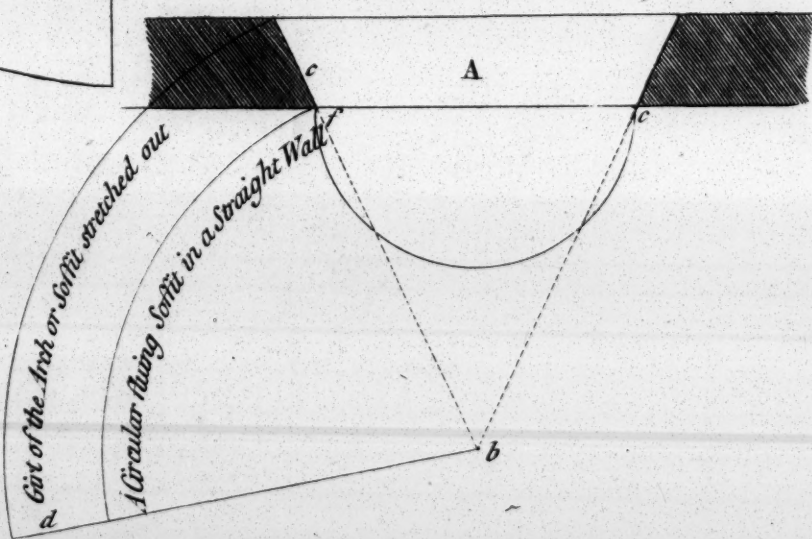
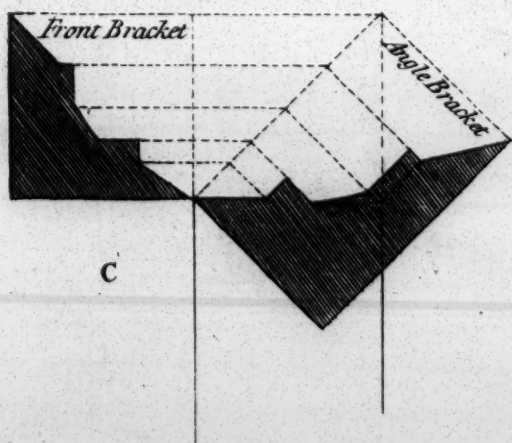
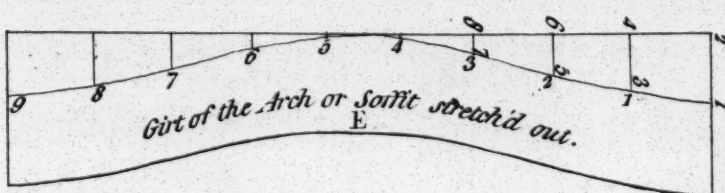
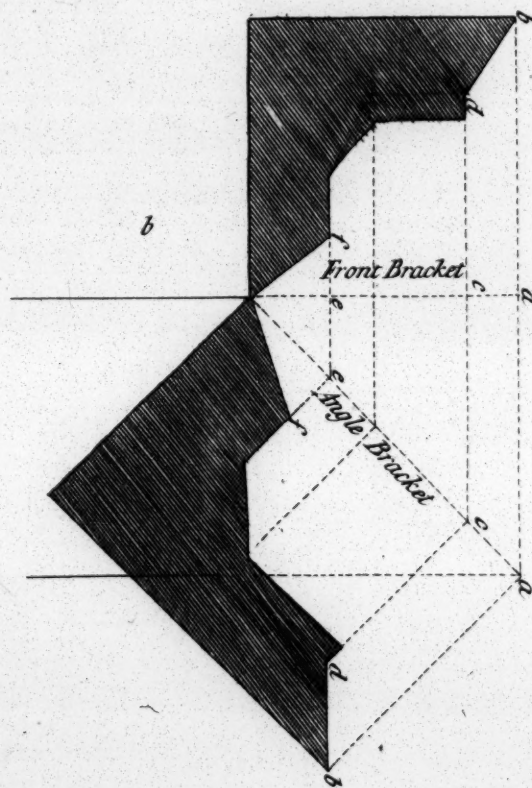
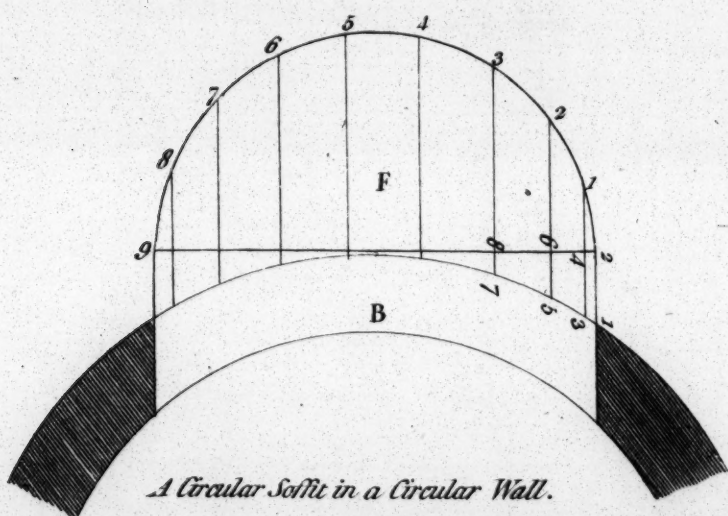
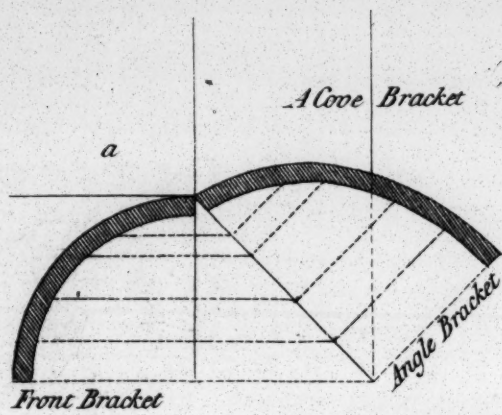
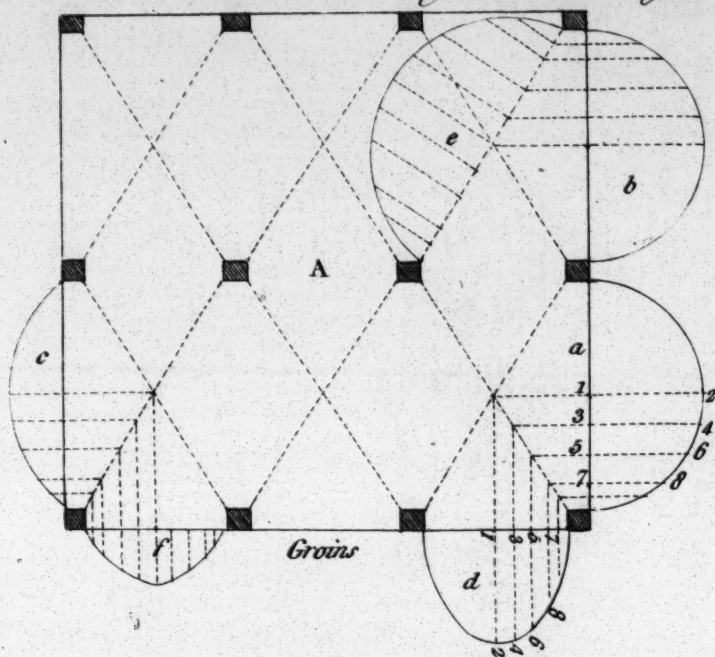
Draw the Cord Line of the Arch, or Base Line so called, to touch the Arch of the Wall, then draw the Semi-Circle and divide the Round of it in a Number of equal Parts, as here into 9, but the more Parts the truer the Work, and draw them to the Arch of the Wall, then stretch out the Arch Line at Length as in *e*, and transfer the Parts that are between the Wall and Base Line, as 1, 2, 3, 4, 5, 6, &c. to *e*, which gives the Edge of the Soffit or Pannel.

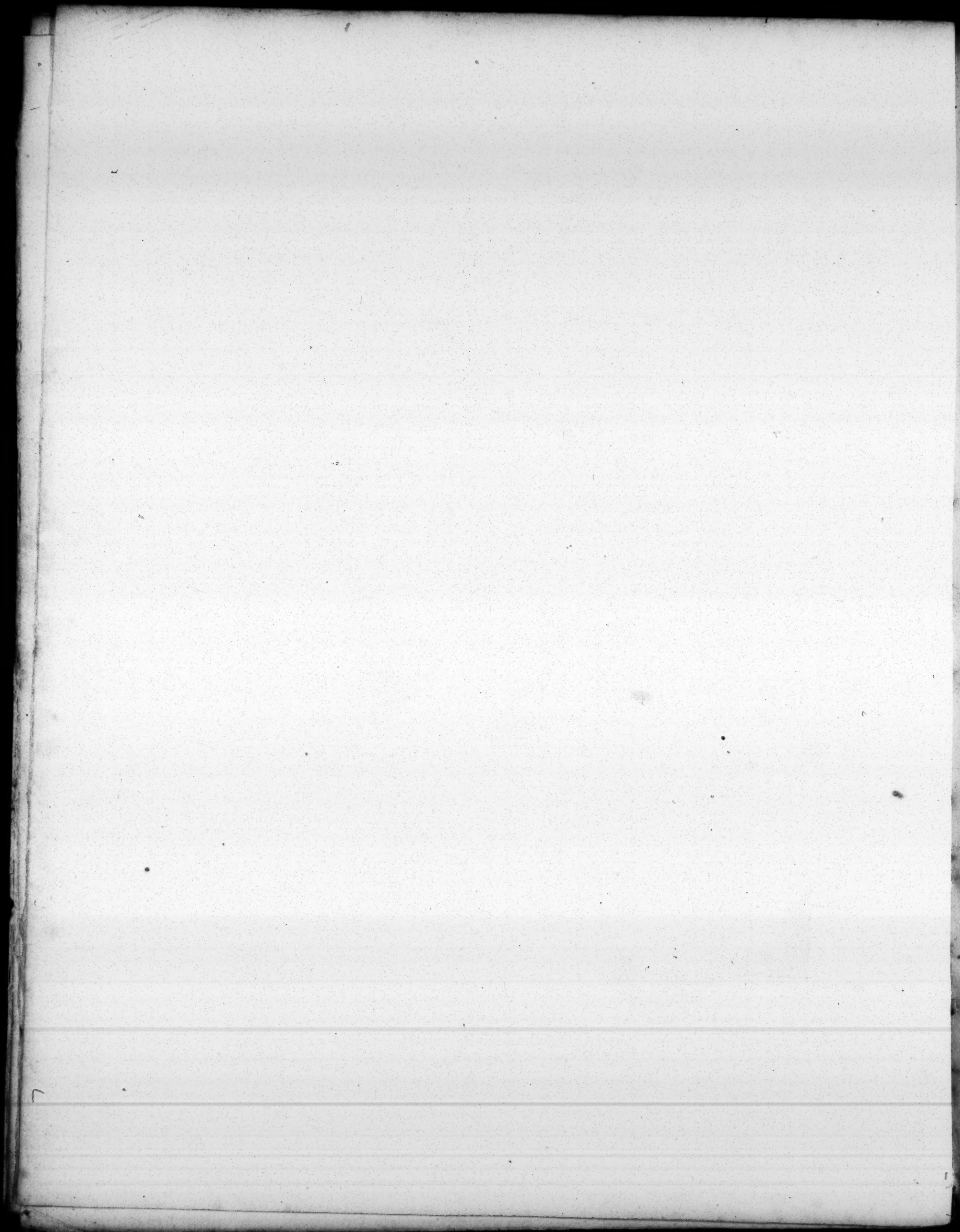
To describe a circular Soffit in a strait Wall on flewing Jambs.

Continue the flewing of the Wall till it meets at *b*, then set the Compasses at *b*, and draw two Arches to the Thickness of the Wall, then put on the Girt of the Soffit *c d*, which gives the length of the Soffit and Edge of ditto.

Groins, Angle Brackets &c.

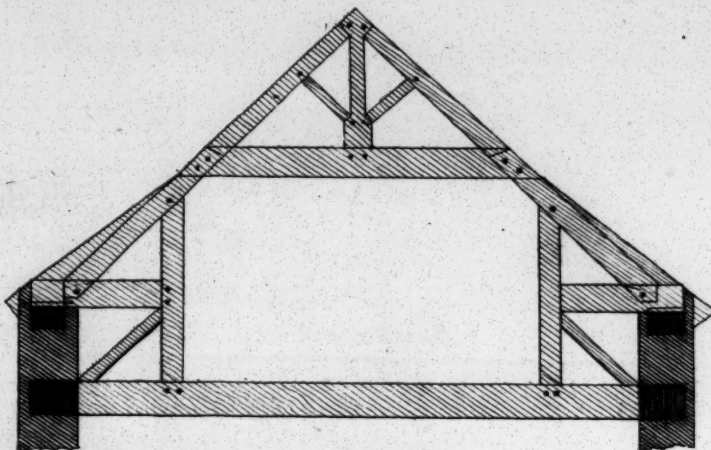
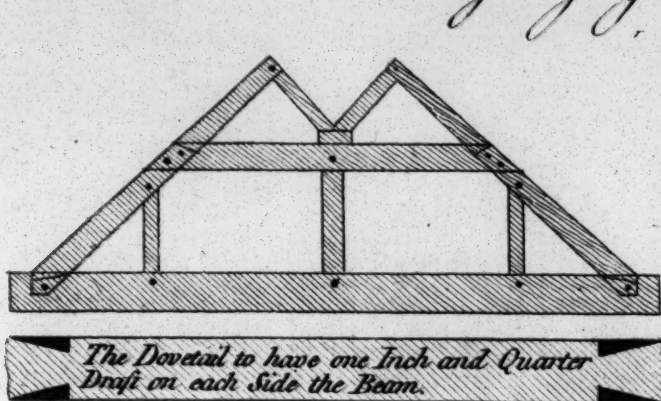
Plate IV.





Trussing Girders Floors &c.

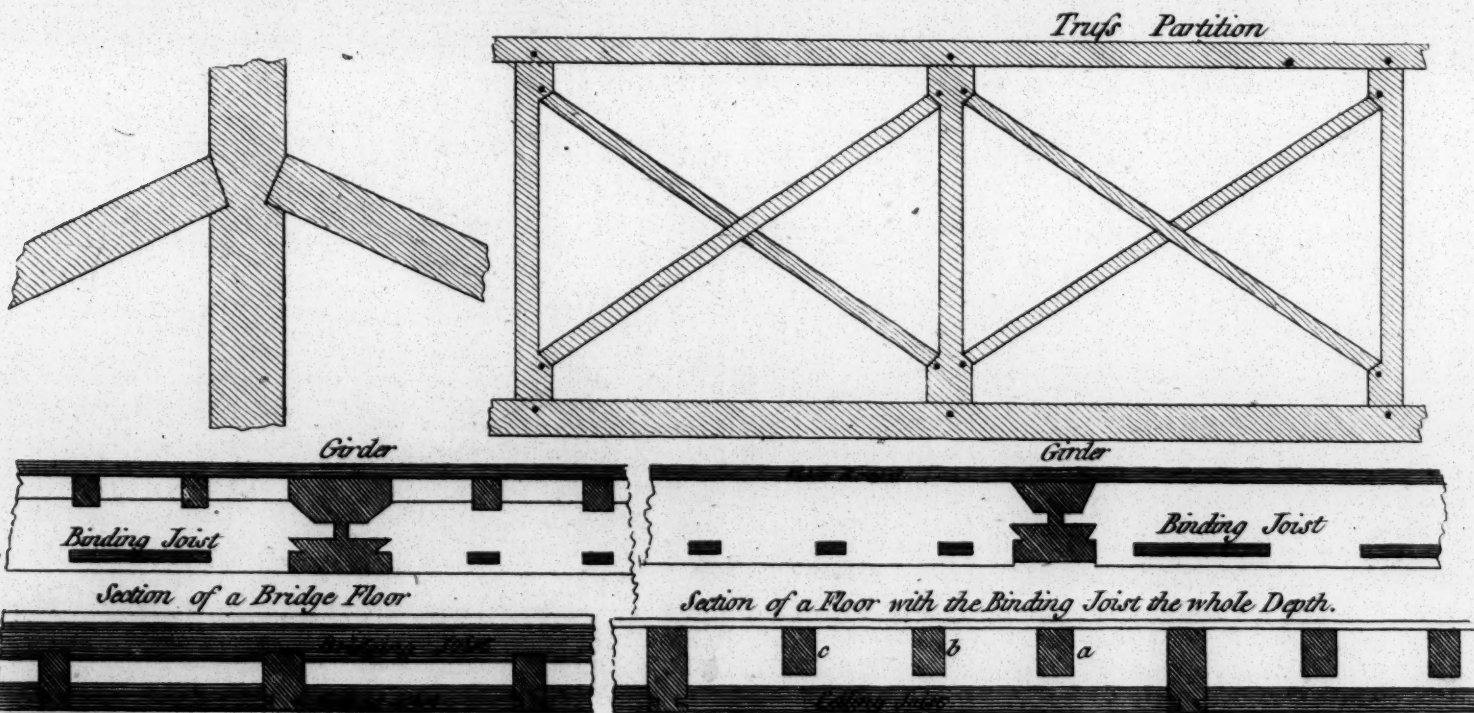
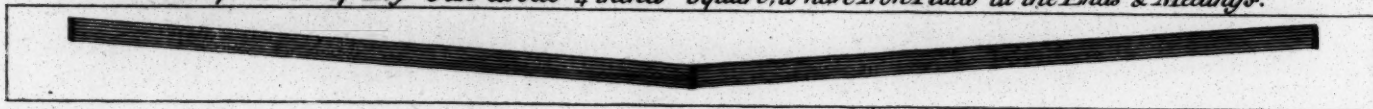
Plate V.



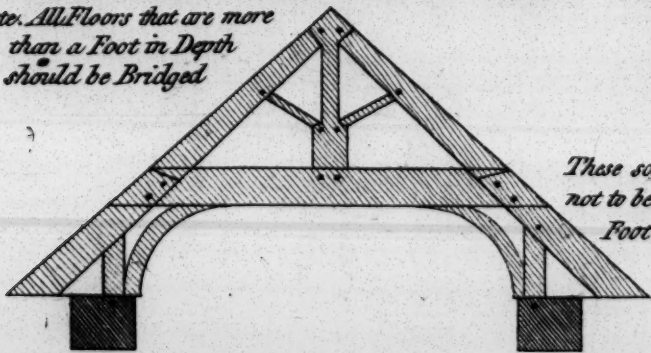
The Girder to be Cutt one Inch Camber in 20 Foot &c. notwithstanding they are to be Truss'd



The Truss to be of Dry Oak about 4 inches Square, to have Iron Plates at the Ends & Meetings.

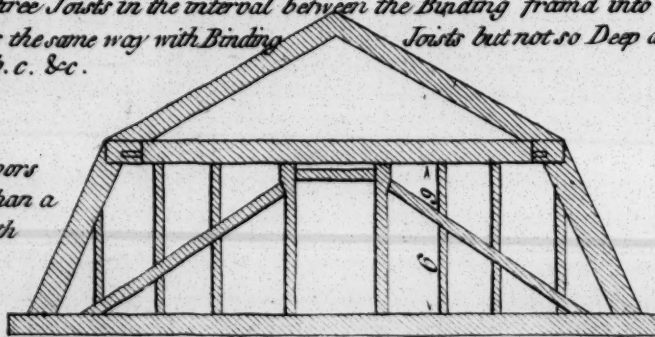


Note. All Floors that are more than a Foot in Depth should be Bridged

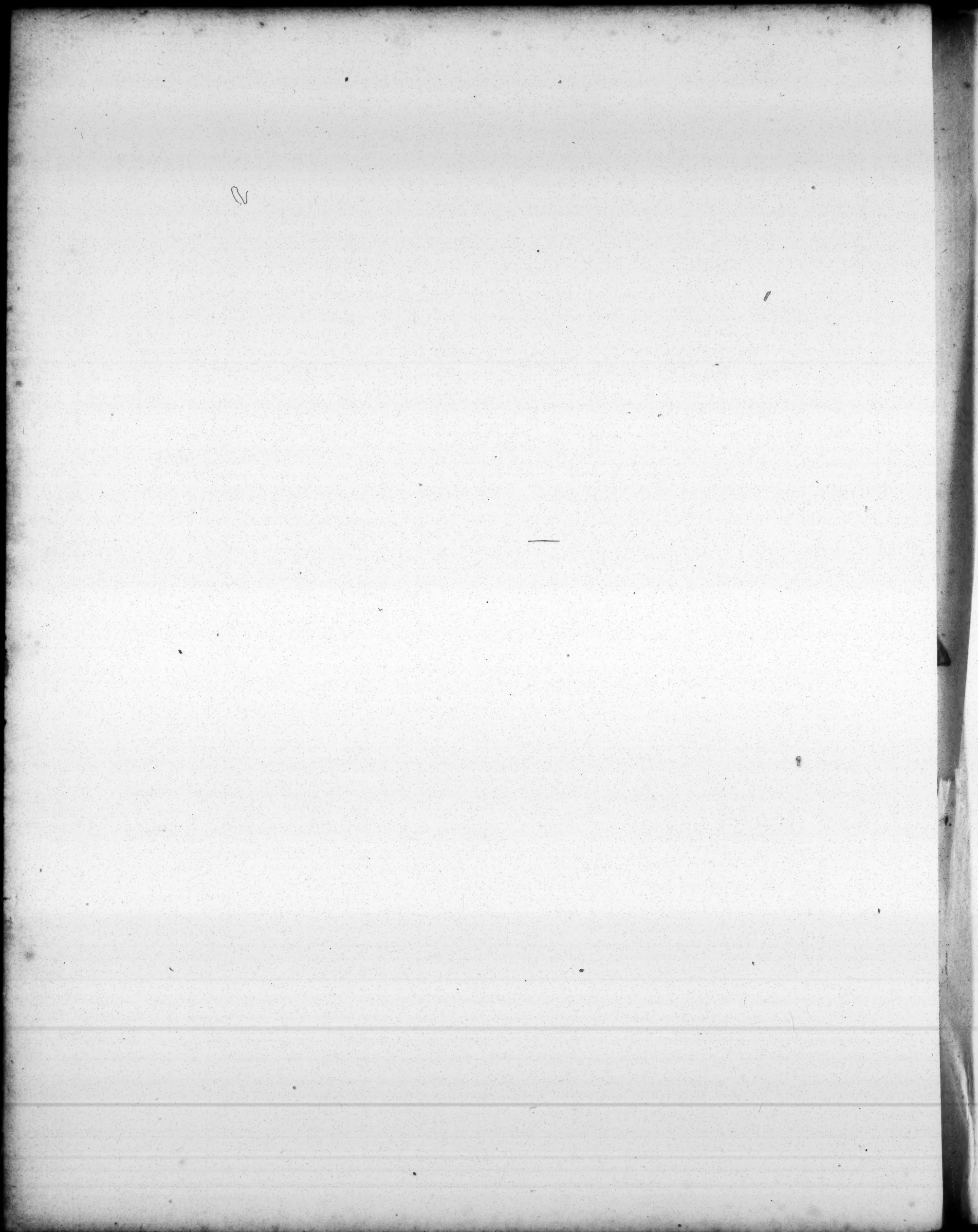


These sort of Floors not to be more than a Foot in Depth

with three Joists in the interval between the Binding fram'd into the Girders the same way with Binding Joists but not so Deep as ditto as a.b.c. &c.



Curb Roof.



To Face P L A T E VI.

Figure *A*. Plan and Ledgment of the Roof, shewing how to find the Length and Backing of Hips, Valley, &c.

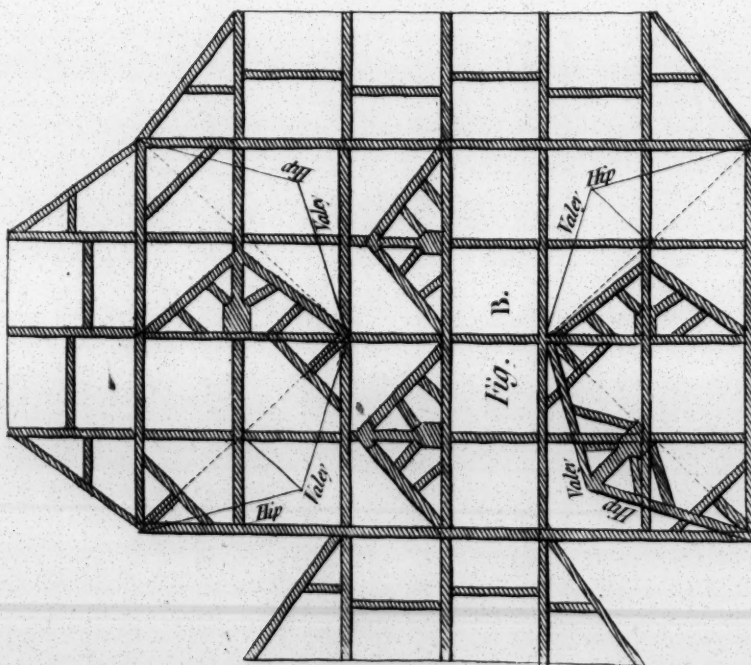
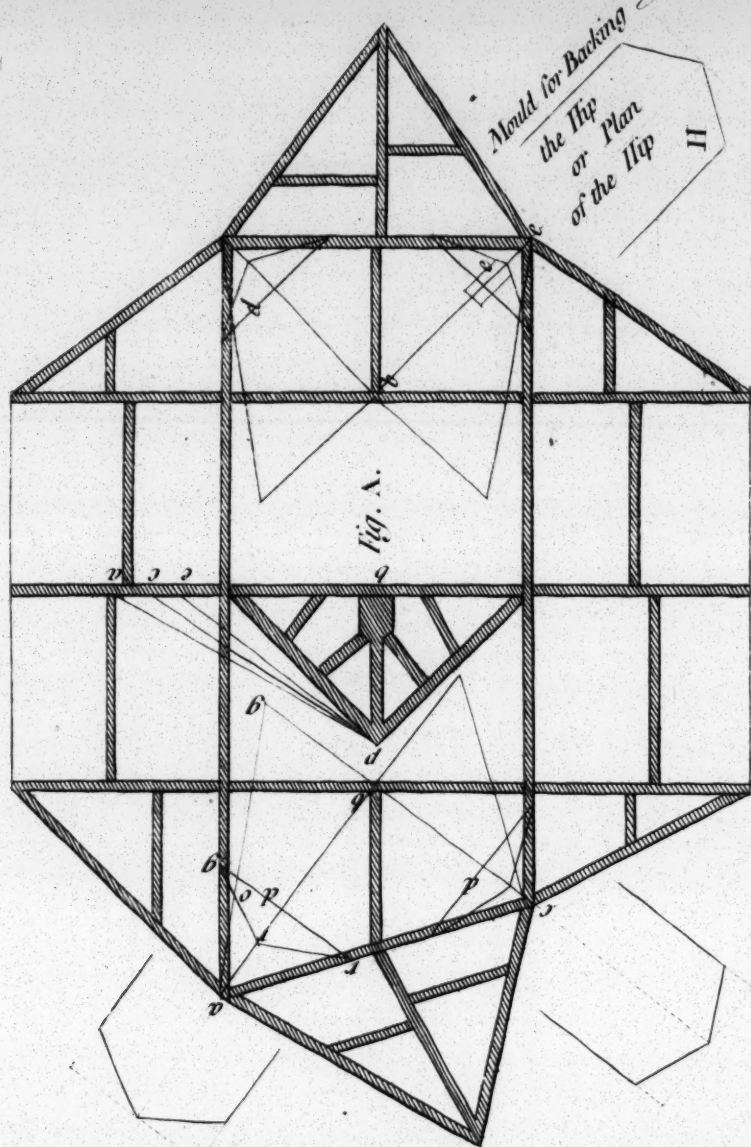
TO find the Length, take the Base Line of the Hips $a b$, $b c$, and $b e$, and set them on the Base Line of the principal Rasters, as $b a$, $b c$, $b e$, and draw Lines from the Top of the Raster to $a c e$, which is the Length of each Hip. Or the length may be found by setting up the Perpendicular from the Base Line of the Hips, as $b g$, and draw the Line $g a$, is the Length of the Hip. To Back the Hip, lay down the Thickness of the Hip at the Angle of the Plan, as H , and draw Lines to range the Plates, will shew how much Wood is to come off in the Backing; that is, the Mould must be a Piece of Wood as thick as the intended Hip, and cut it to the Splay or Pitch of the Hip at the Foot, setting it on the Angle of the Plate in the Direction of the Hip, mark it under by the Side of the Plate; gives the true Backing in any Case required. A very sure and safe Way for the Backing.

Figure *B* is the Plan of an M Roof, with Hip and Valley in Ledgment, &c.

Note, The Back of the Hip is found another Way, as in the Plan *A*. by drawing a Line at Right Angles, cross the Base Line of the Hip, as $r d g$, or on any part of the Base Line, and set one Foot of the Compass at d , and extend to the nearest part of the Hip $g a$, and turn it on the Base Line as at r , then draw the Lines from the Point r to $g r$, on the Edge of the Plate, which is the Backing of the Hip required. This will do in any Case, square or bevel.

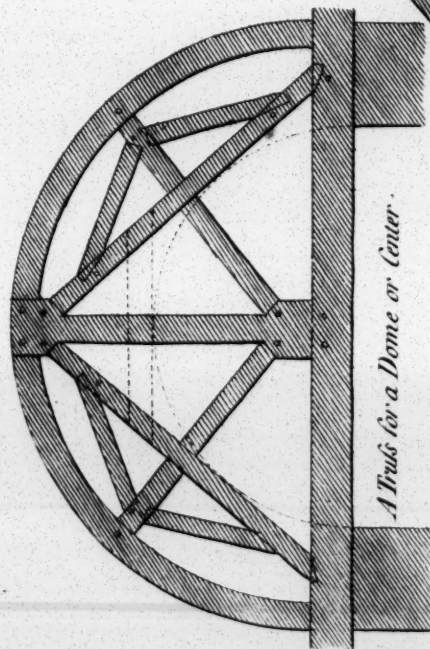
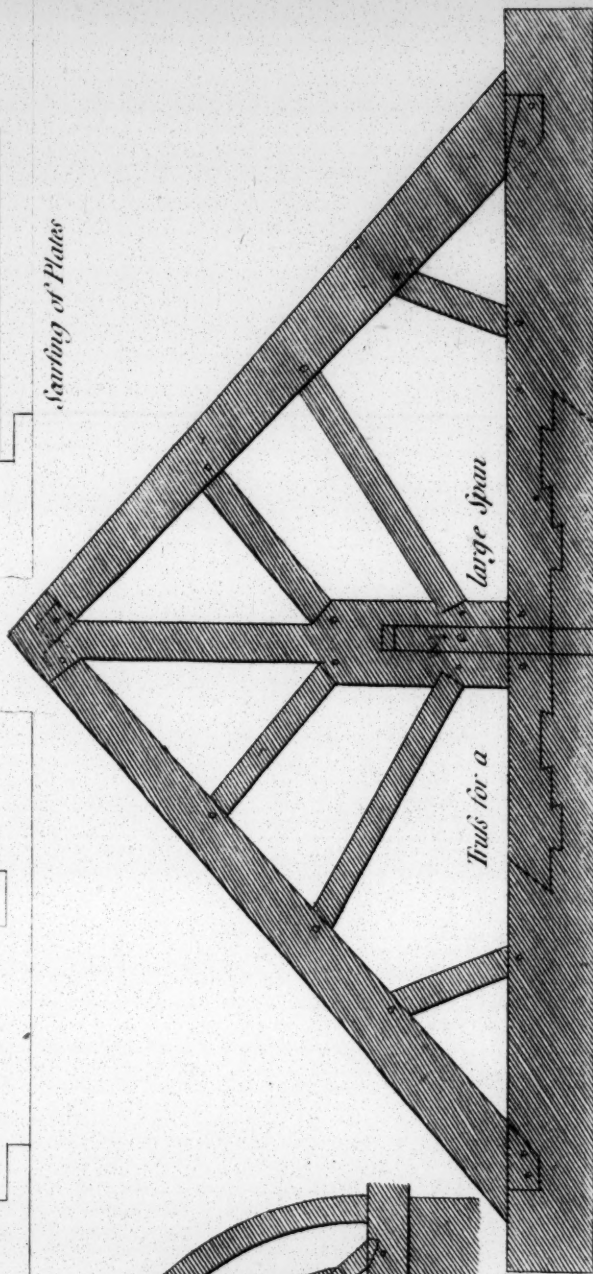
Plan of Ledge of Roofs.

Plate VI.



Two Roofs in Ledge showing how to find the Length and Backing of Hips.

Square or Bend in any Case required

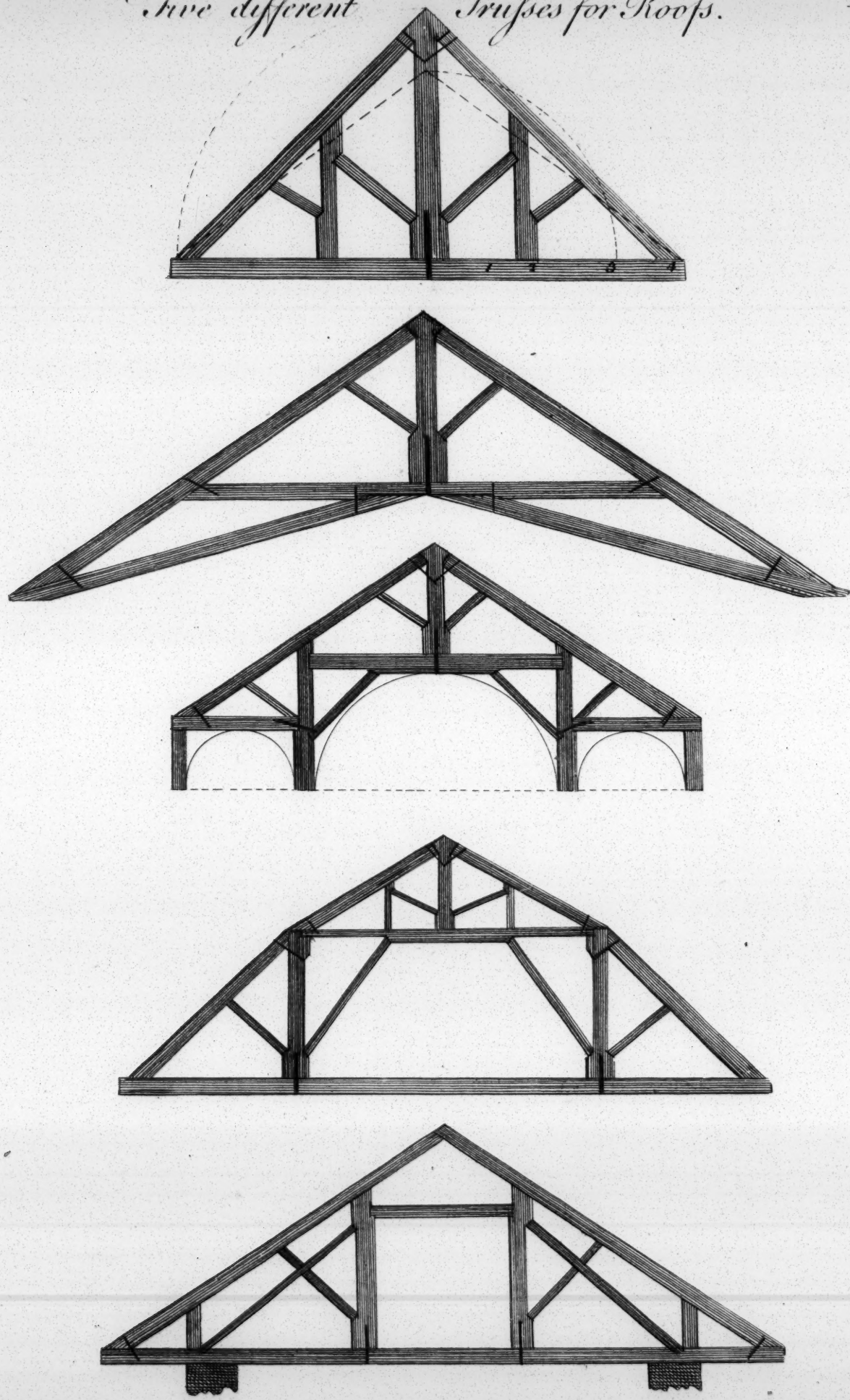


Trussing of Beams



Five different Trusses for Roofs.

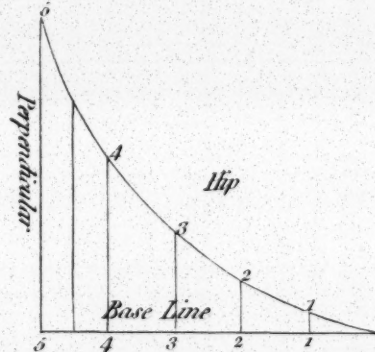
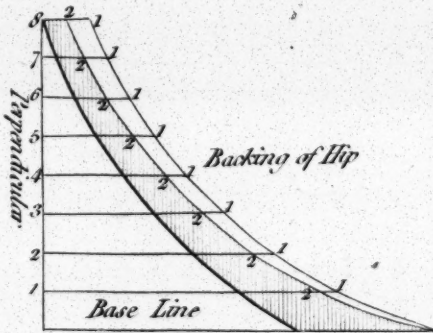
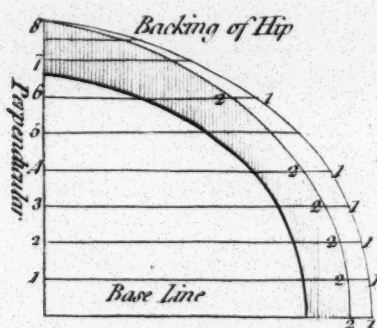
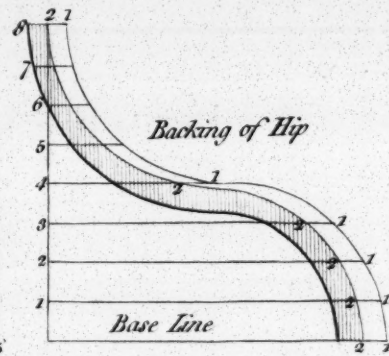
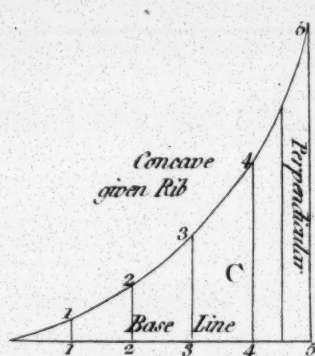
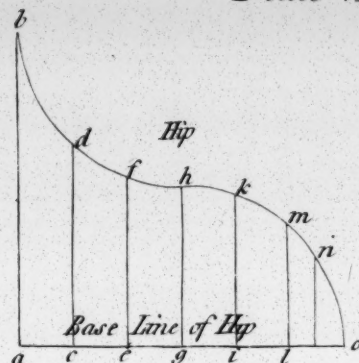
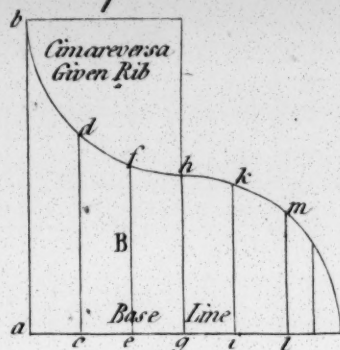
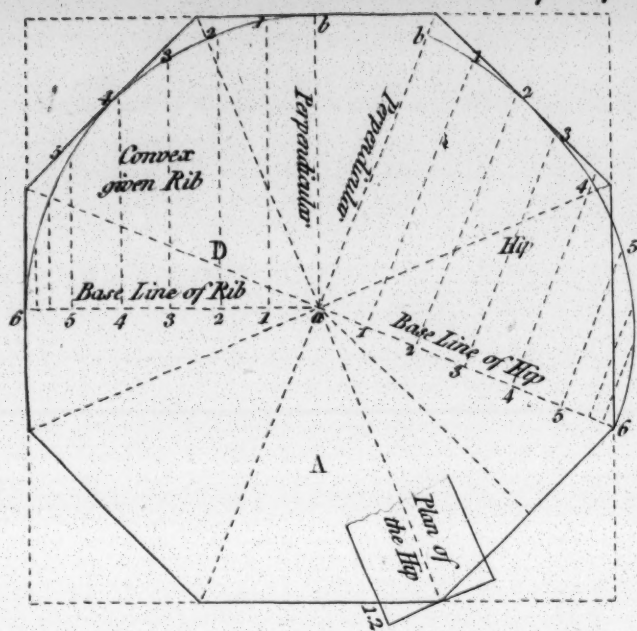
Plate VII.



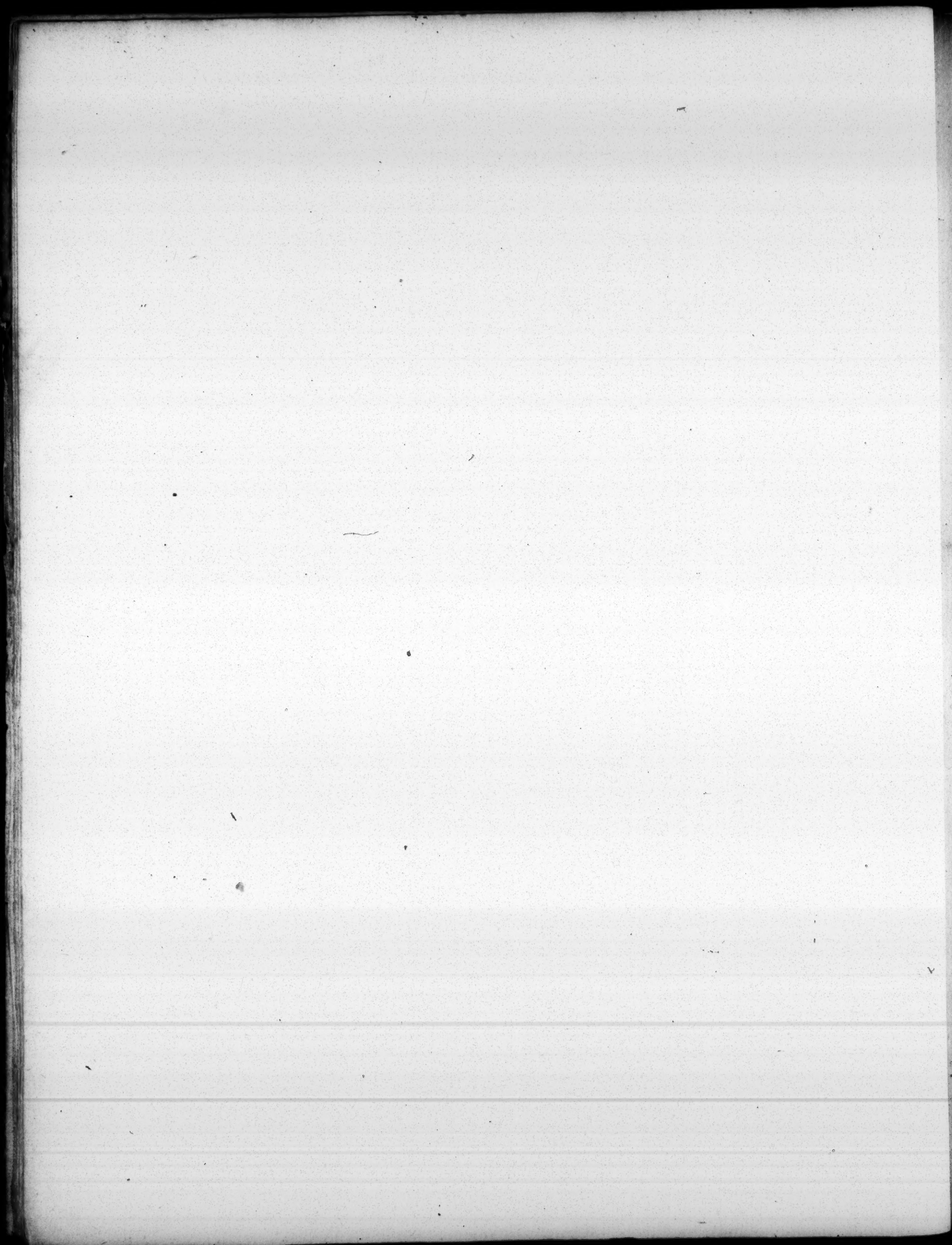


Hips for Roofs &c.

Plate VIII.



The manner of finding the Length and Backing of Curve Line Hips in any Case required. Suppose the Octagon Plan A. to be Roofed with the Cimareversa B. or the Concave C. or the Convex D. in the Plan. Divide the Base Line of the given Rib into any number of equal Parts and draw Lines from those parts on the Base Line to the Back of the Rafter .a b .c d .e f .g h .i k .l m. and all the others as 11, 22, 33, and so on. Then the Base Line of the Hips must be divided into the same number of Parts and Lines drawn up at Pleasure as a b .c d &c. from the Base Line of the Hips, then take the several Heights of the given Ribs and set them on the Hip Lines, then trace them through those Points b d .f h .k m .n o. that will give the Curve or Edge of the Hip and the same for all the others and for the Backing of the said Hips, there is a Plan of the Hip at the Angle of the Plan A. which shews how much Wood is to be Cut off each side of the Hip. Divide the Perpendicular Height of the Hips into any number of equal Parts, and draw Lines Parallel with the Base Lines of the Hip. Then take the Distance from the Plan of the Hip to the Side of the Plan A. as 1 2 and put them on the Hips, as 1 2 .1 2 .&c. which gives the true Backing in any Case required. Note when the parts are Set on at Bottom and Top of the Hip the Mould may be shifted and marked which shews the Wood to come off.



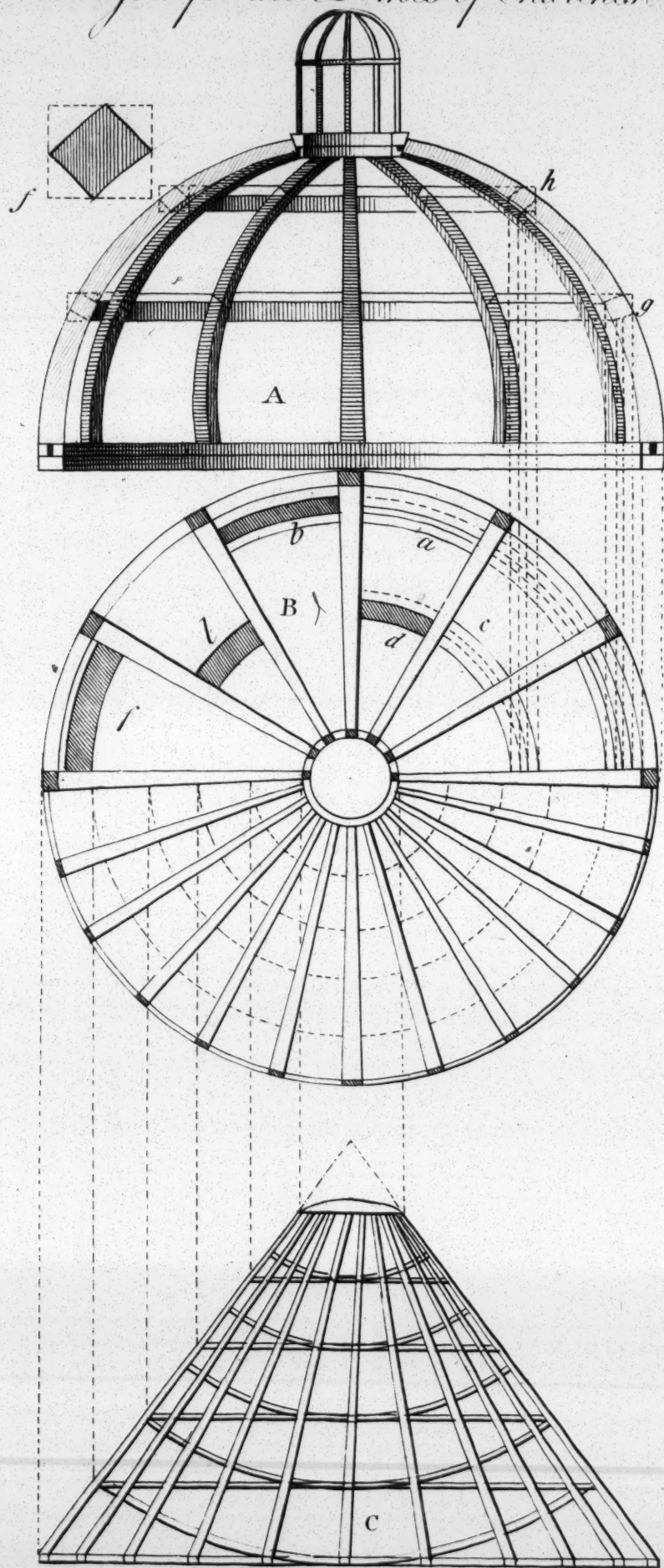
To Face PLATE IX.

TRUSSES for the DOMES of CHURCHES, &c.

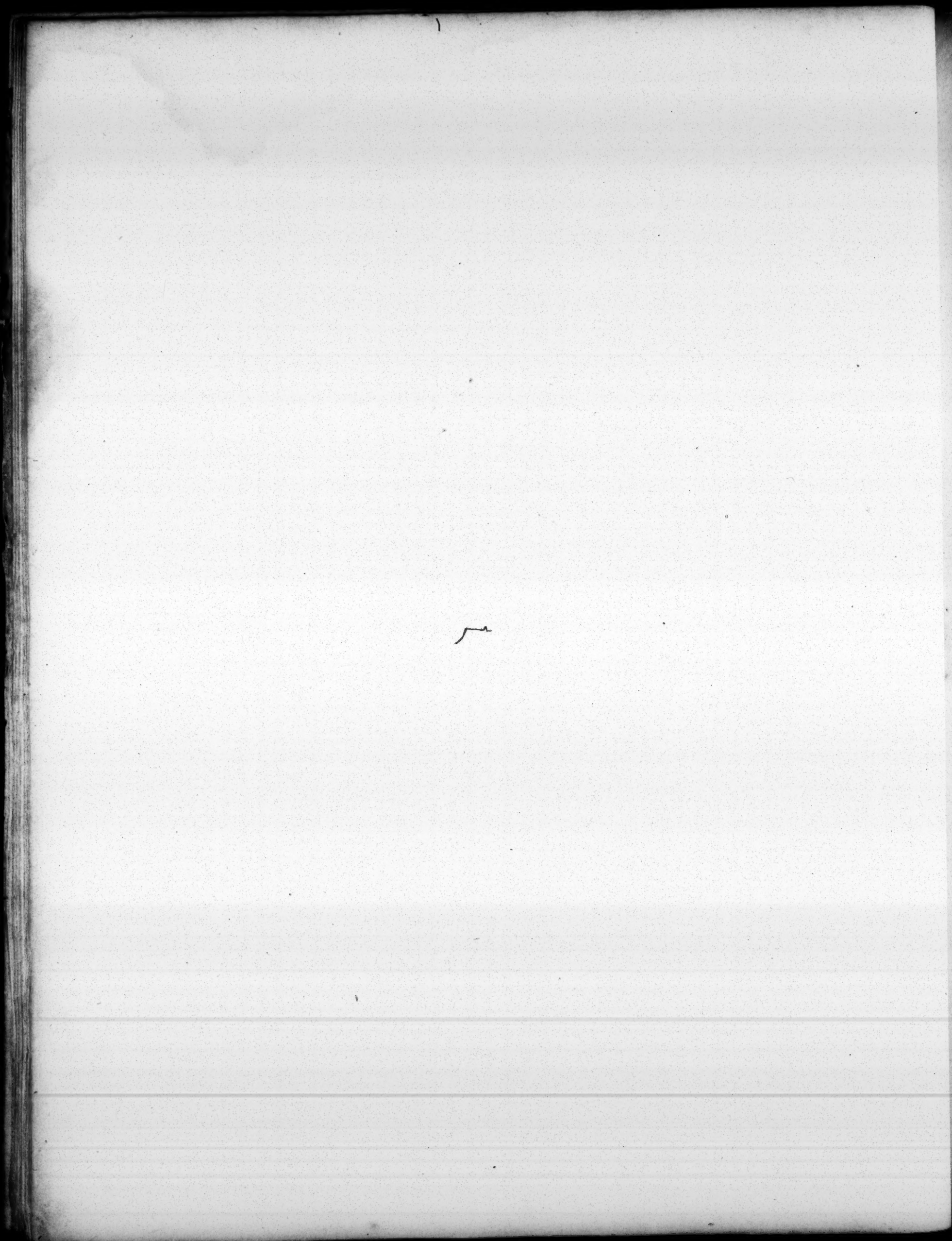
A. Is a Truss for a Dome, with a Lanthorn or Cupola at the Top, to give Light. **B.** the Plan; the Kirb or Plate to be in two Thicknesses, which is likewise best for the Ribs, and for the Kirb on which the Cupola stands. The Curve of the Dome **A.** is a Semi-circle, or will serve for a Semi-elipsis. The Moulds *f* and *c* in the Plan **B.** cut the Sweep of the Purlines; and the Moulds *b a* and *c d* are for the Top and Bottom of the Purlines. **C.** is a Cone or Lanthorn to light a Stair-case, &c. the horizontal Bars must be squared in the same Manner as the Purlines in **A.** The Mould for cutting or squaring the Purlines, is like the Bottom Mould *f* in **B.** so that if the Purlines be cut to the Thickness required as in the Section **A.**, and also to the Mould *f*, then *a* is the Mould for the Bottom and *b* for the Top, as appears by the Lines let fall to the Plan **B** from the Purlines *g* and *h*; then **C** in the Plan is the top, and *d* the bottom Mould. *l* is the sweep Mould for the Top of the Purline *h*. By this Rule the Purlines may be squared, which completes the Work. If the Plan **B.** the Ribs and Purlines are in size and Number as the Cone **C.**, it will do for a Lanthorn or Light to a Stair-case, &c. the Manner of squaring the Ribs and Cross Bars is the same as the Dome.

Trusses for the Domes of Churches &c.

Plate I.

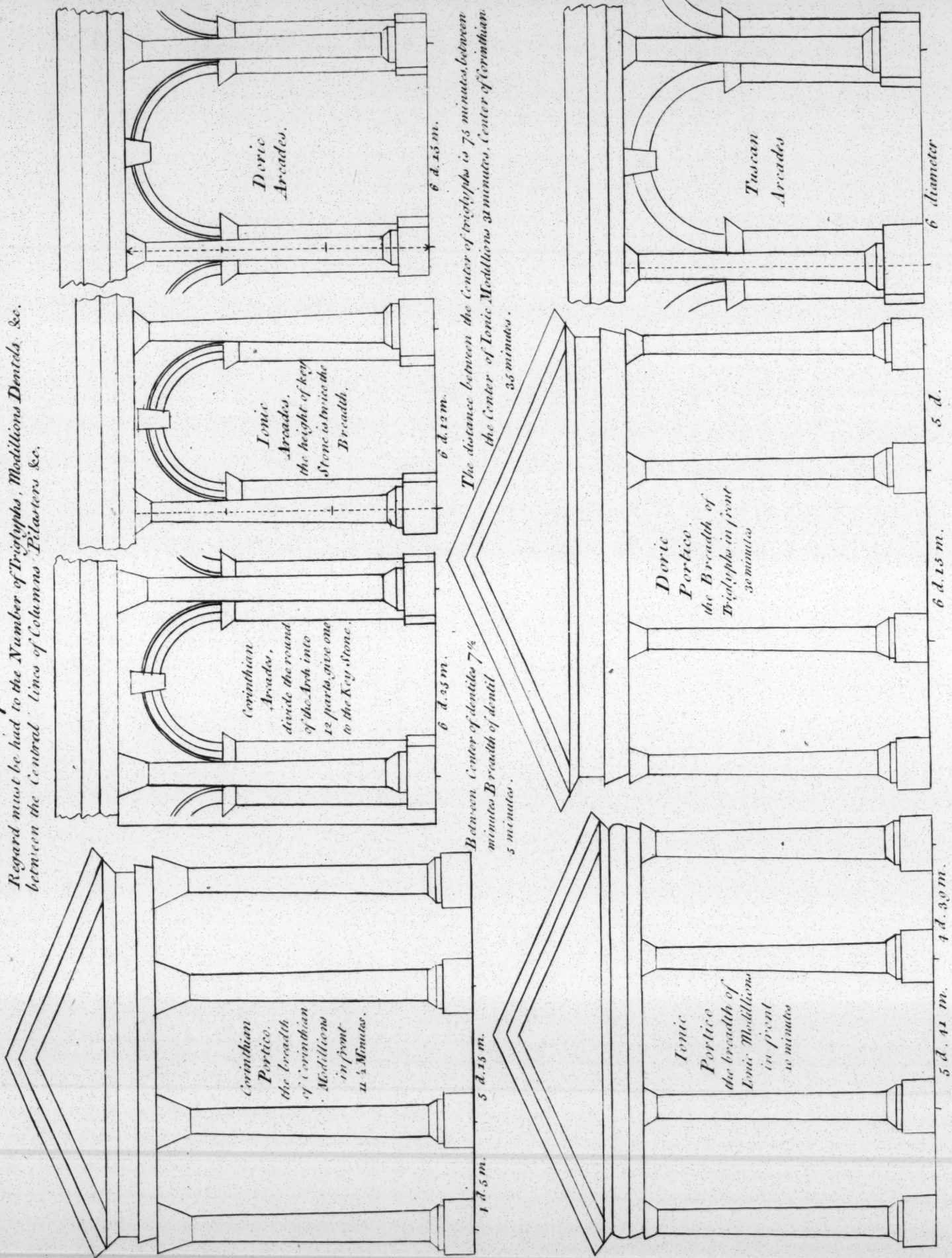


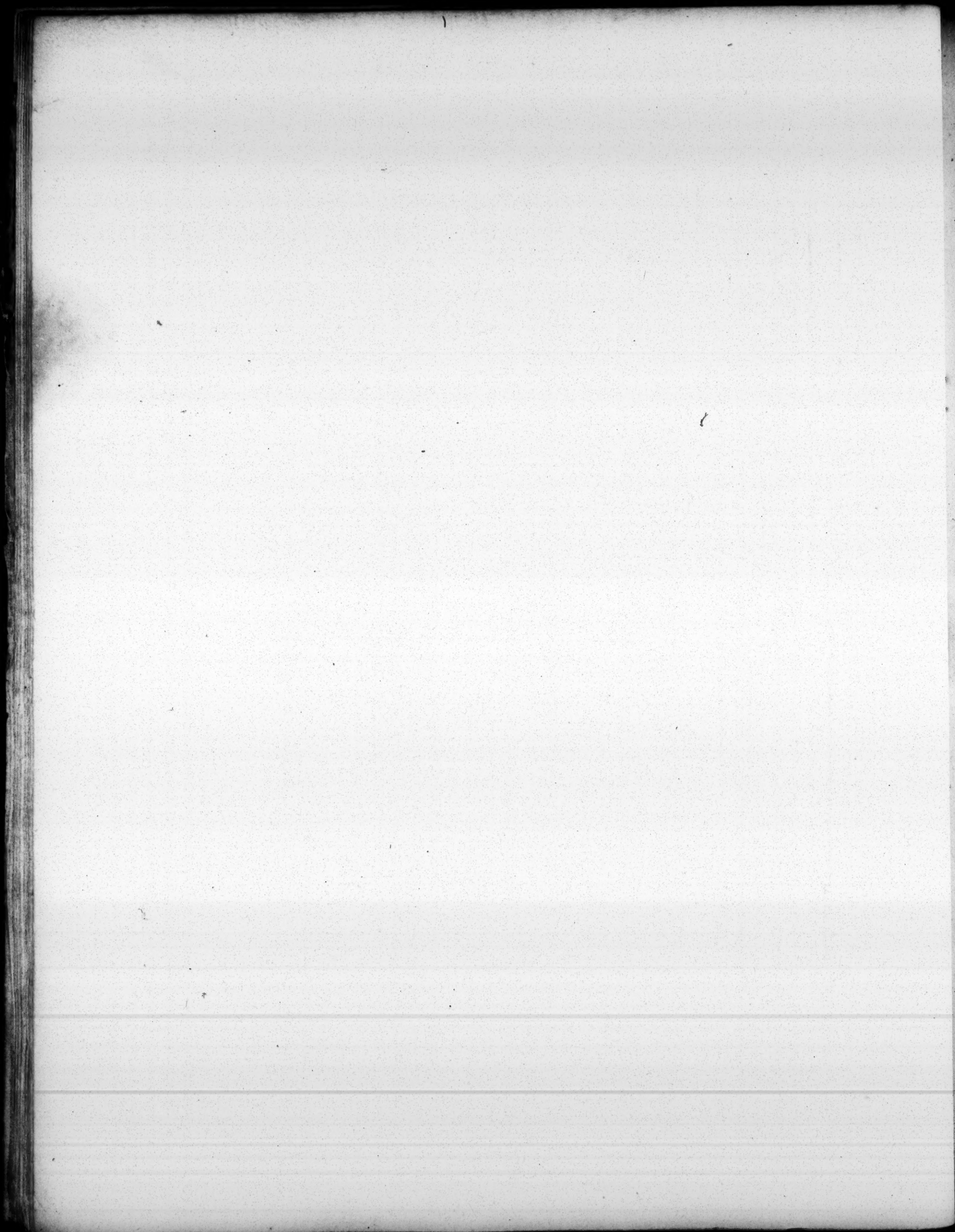




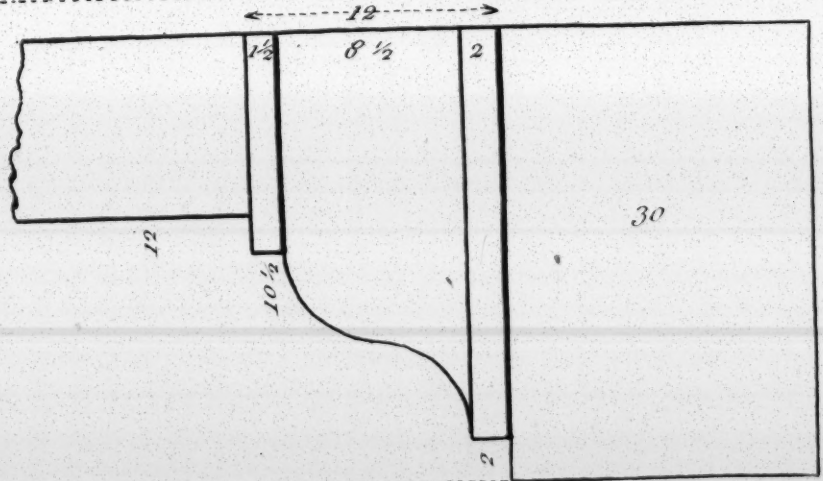
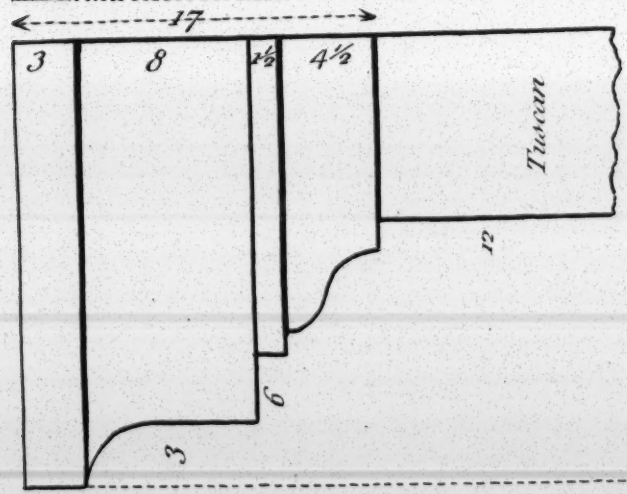
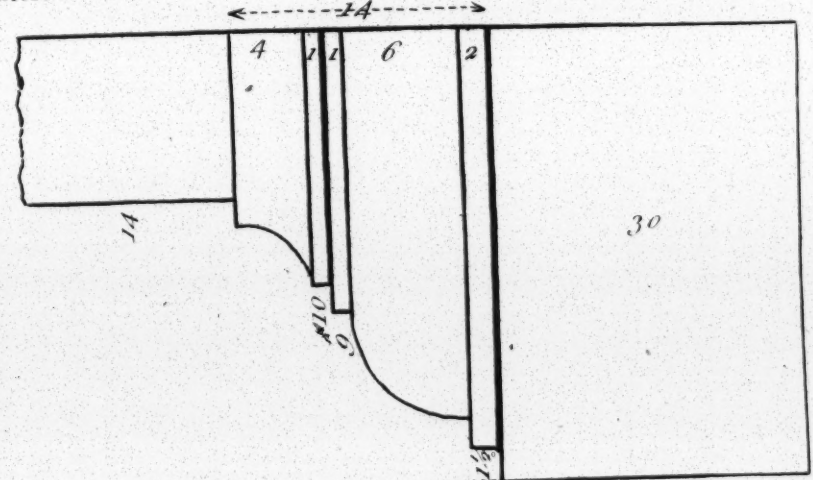
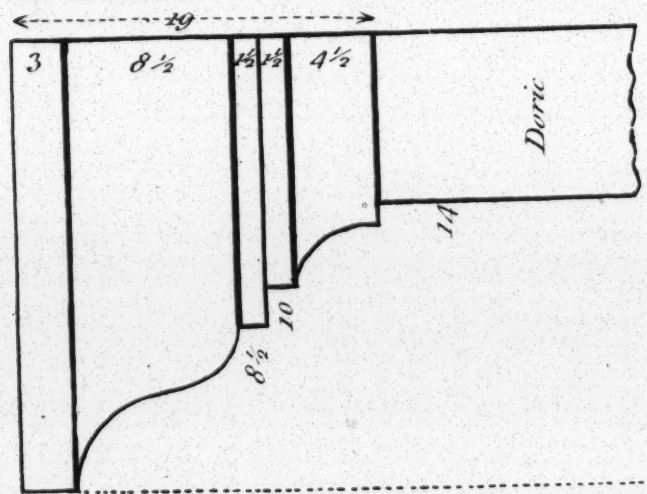
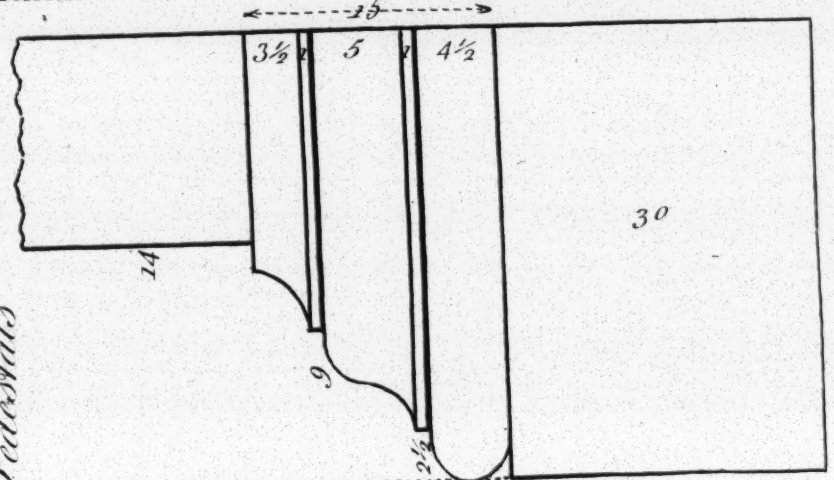
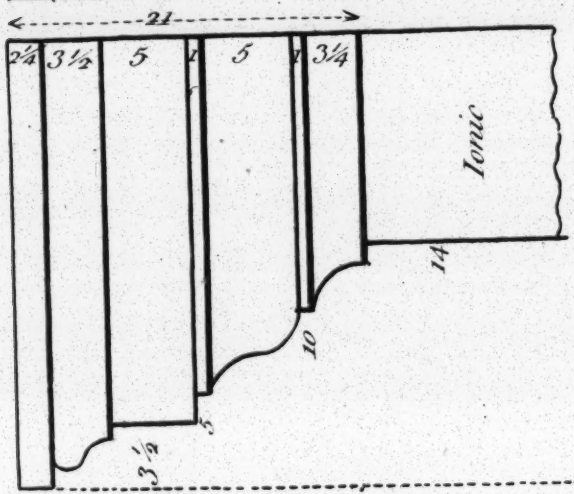
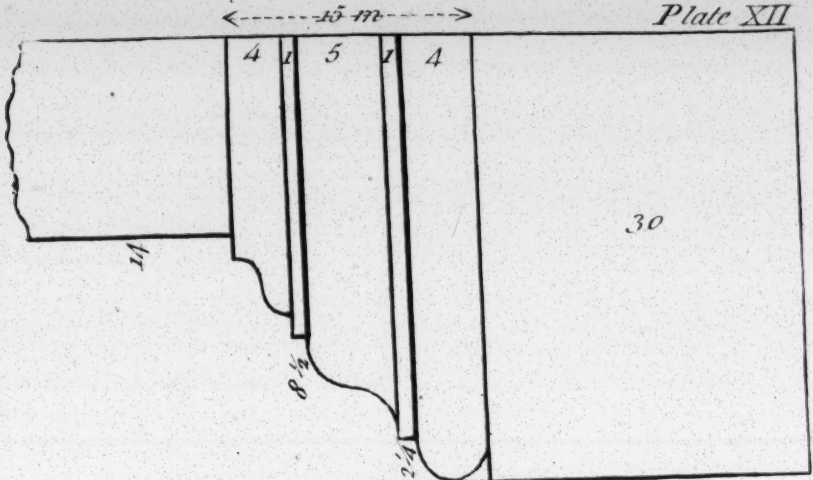
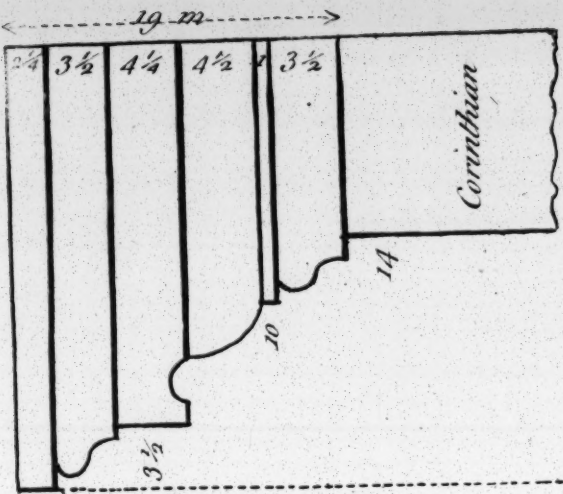
Intercolumniations for Porticos, Arcades, Colonnades &c.

Regard must be had to the Number of Triglyphs, Modillions, Dentils, &c. between the Central lines of Columns, Pilasters &c.





Pedestals



7

(To face P L A T E XIII.)

To Proportion the ORDERS to any given Height, on a Pedestal.

THE Tuscan Order. Divide the given Height a. b. into five equal Parts, and give one to the Pedestal; then divide the remaining Height c. d. into five equal Parts, and give one to the Entablature; and the remaining Part e. f. into seven Parts; one of those Parts is the Diameter of the Column, which is to be divided into six Parts, and one in ten for a Scale to work by, which is a Scale of Minutes; those Minutes to be given to the Moulding in Height and Projection, as figured on the Plate in all the Orders.

The Doric Order. Divide the Height a. b. into five Parts, and give one to the Pedestal c. d. into five Parts; one is the Entablature; equal two Diameters of the Column e. f. into eight Parts; one is the Diameter of the Column, to be divided into six, and one in ten for the Scale of Minutes to work by.

The Ionic Order. Divide the given Height a. b. into five Parts, and give one to the Pedestal; then divide c. d. into six Parts, and give one to the Entablature, equal one Diameter forty-eight Minutes; then divide e. f. into nine Parts, one is the Diameter of the Column.

The Corinthian Order. Divide the Height a. b. into five Parts, and give one to the Pedestal; then divide c. d. into six Parts, and give one to the Entablature, equal two Diameters; then divide e. f. into ten Parts; one is the Diameter of the Column, to be divided into six, and one of them six into ten for the Scale.

(P L A T E XIV.)

To Proportion the ORDERS on a Sub-plinth.

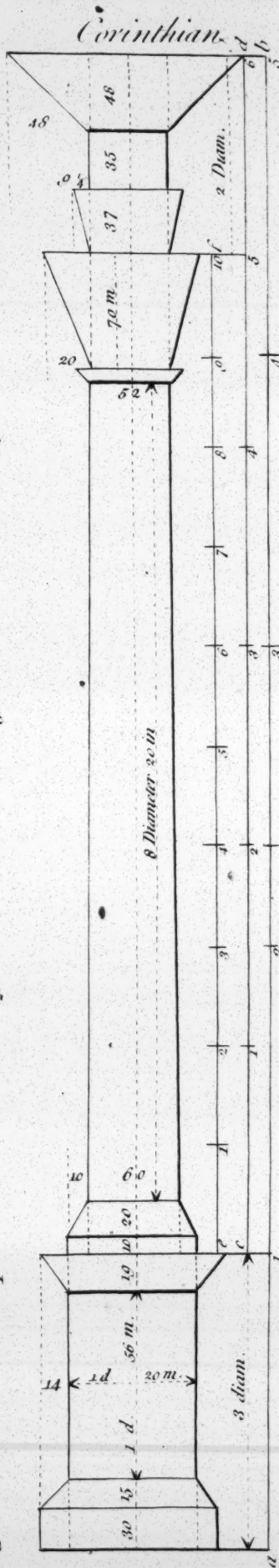
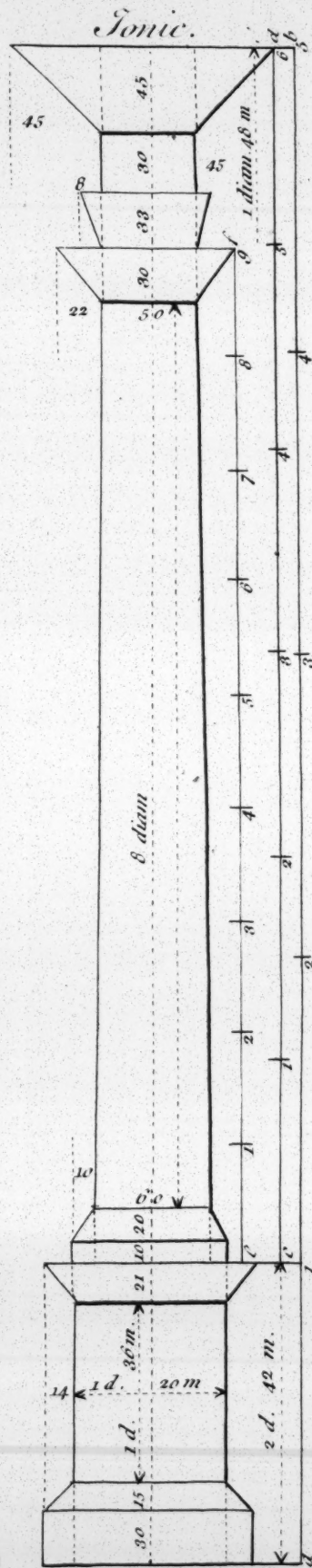
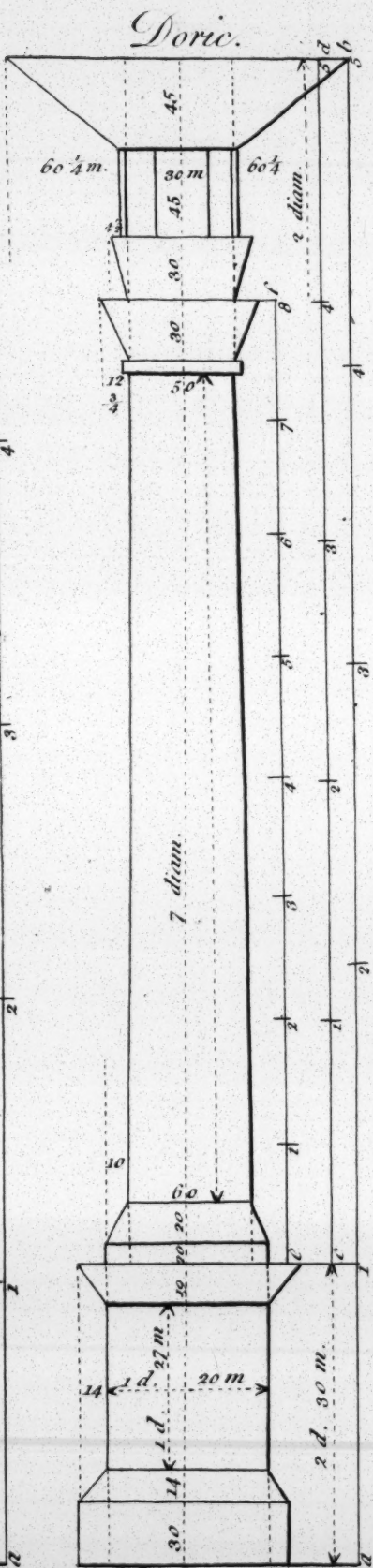
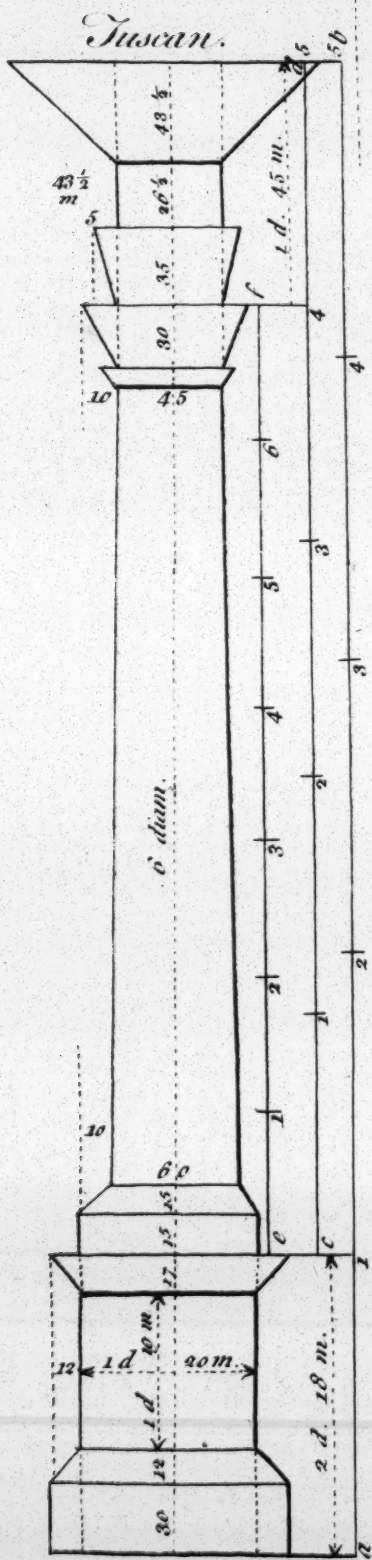
THE Tuscan Order. Divide the given Height into ten equal Parts, one of which is the Diameter of the Column; give one to the Sub-plinth, and one Diameter and forty-five Minutes to the Entablature.

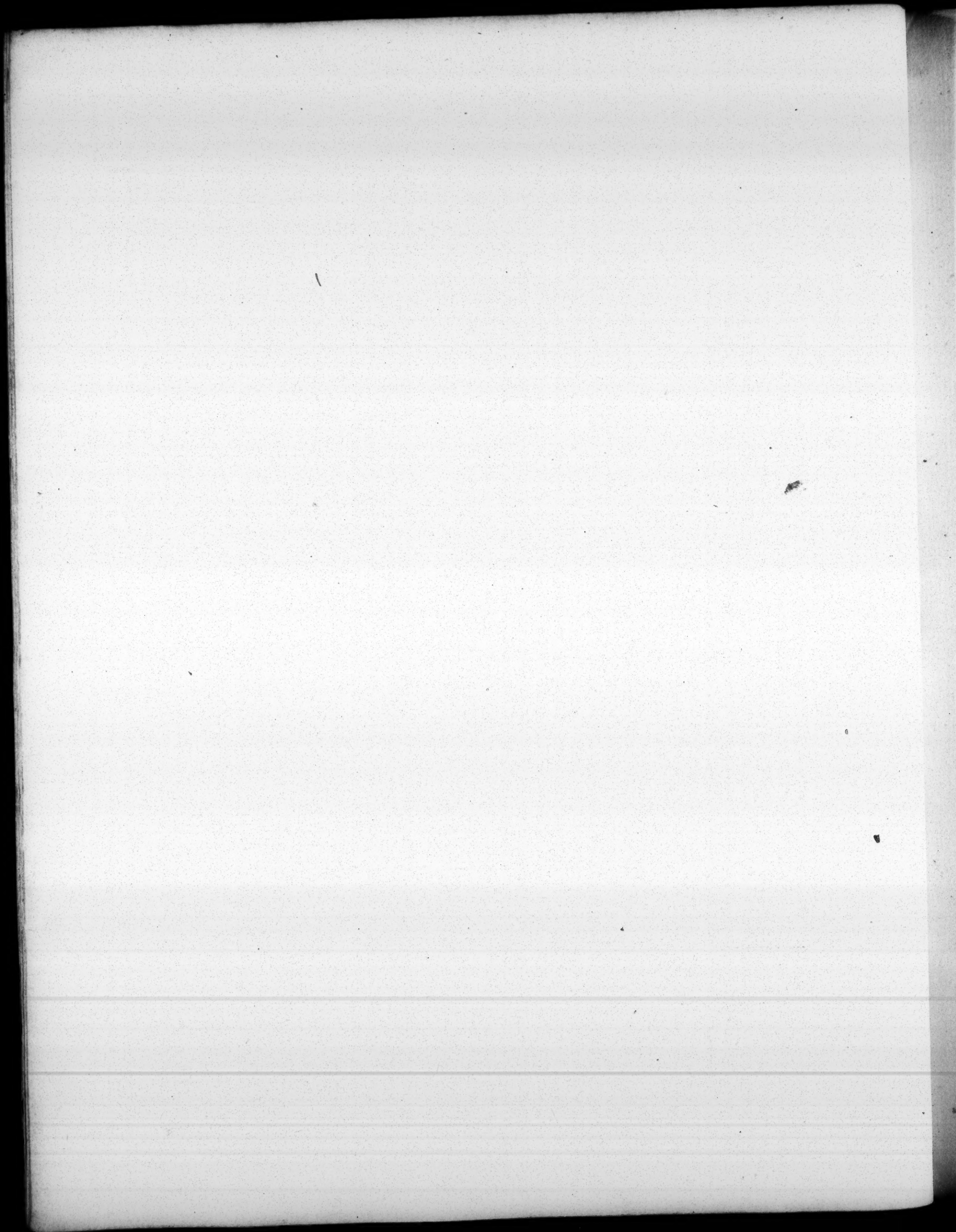
The Doric Order. Divide the Height into eleven Parts; one is the Diameter of the Column, to be divided into six, and one in ten.

The Ionic Order. Divide the Height into twelve Parts, one is the Diameter of the Column; give one to the Sub-plinth, and one Diameter and forty-eight Minutes to the Entablature.

The Corinthian Order. Divide the Height into thirteen Parts; one is the Diameter of the Column, and two the Entablature,

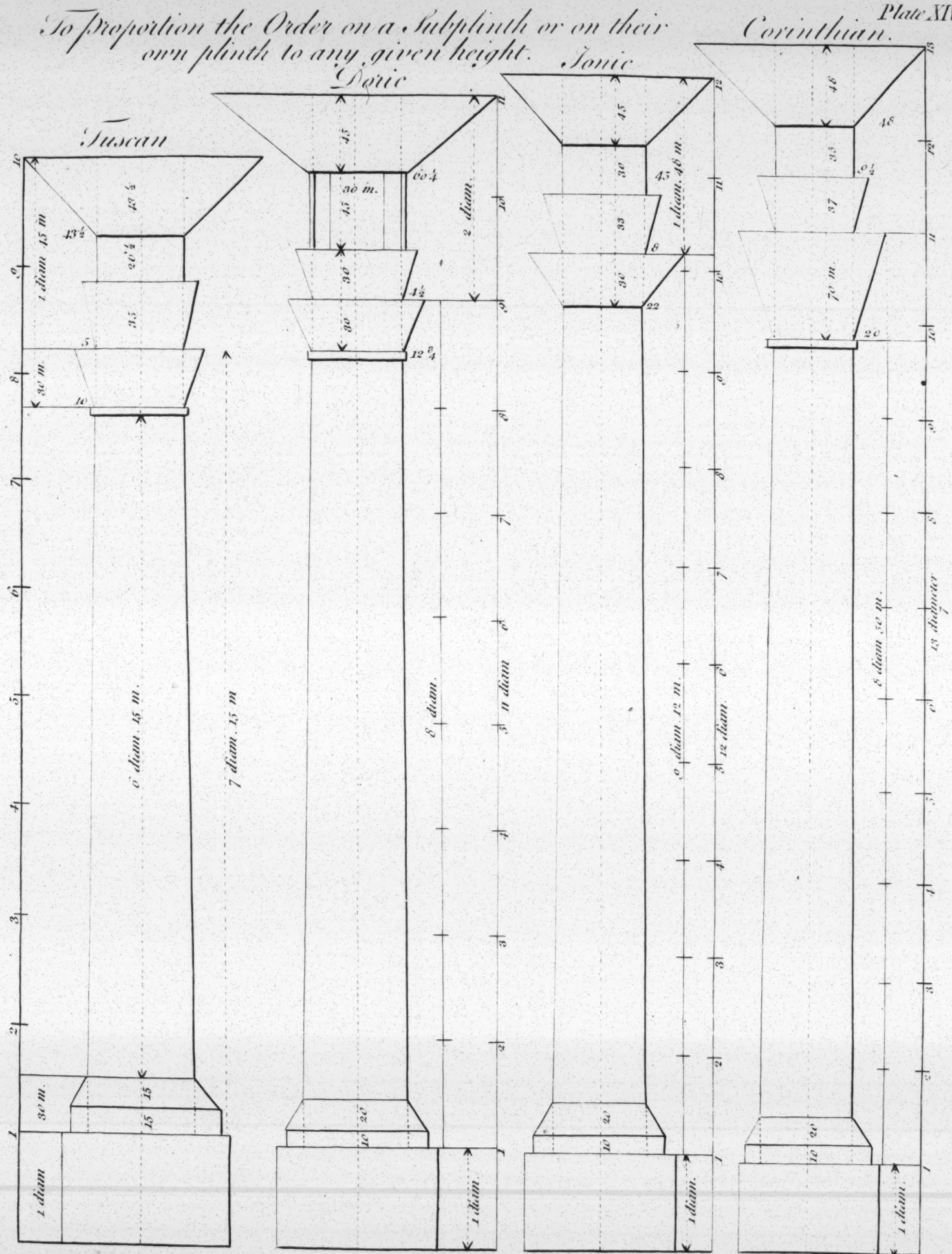
To proportion the Orders on a Pedestal
to any given height.

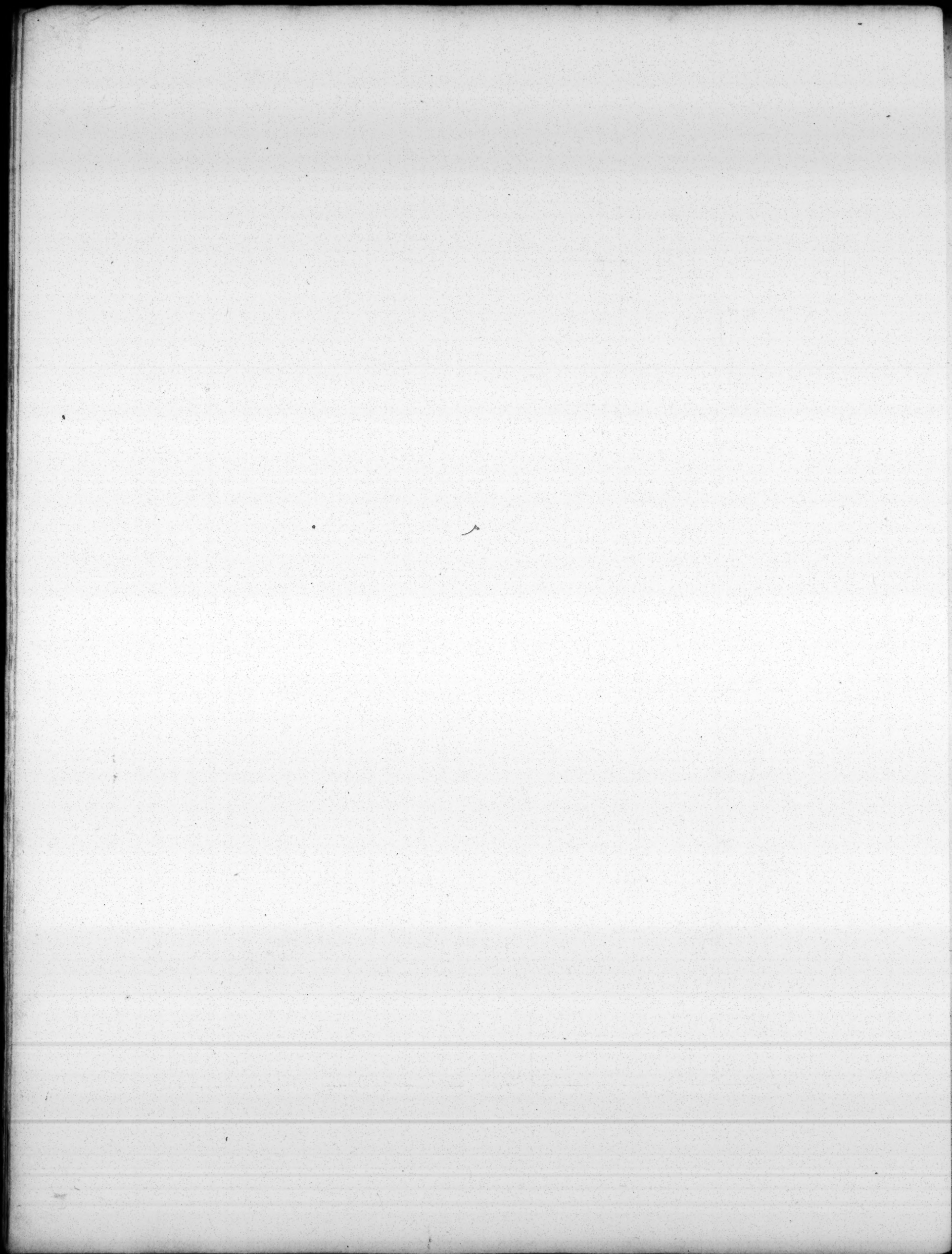




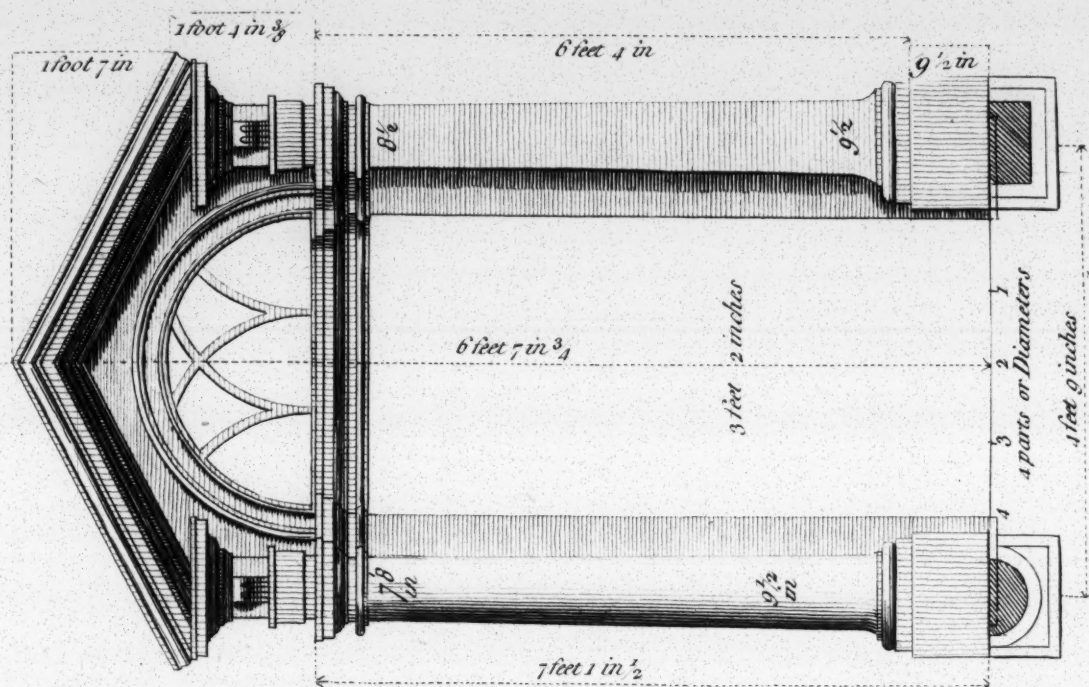
To proportion the Order on a Subplinth or on their own plinth to any given height.

Plate XIV.



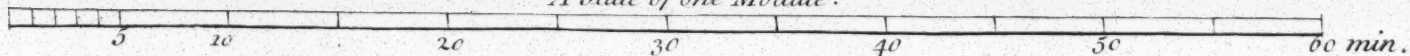


Frontispiece in the Tuscan Order.

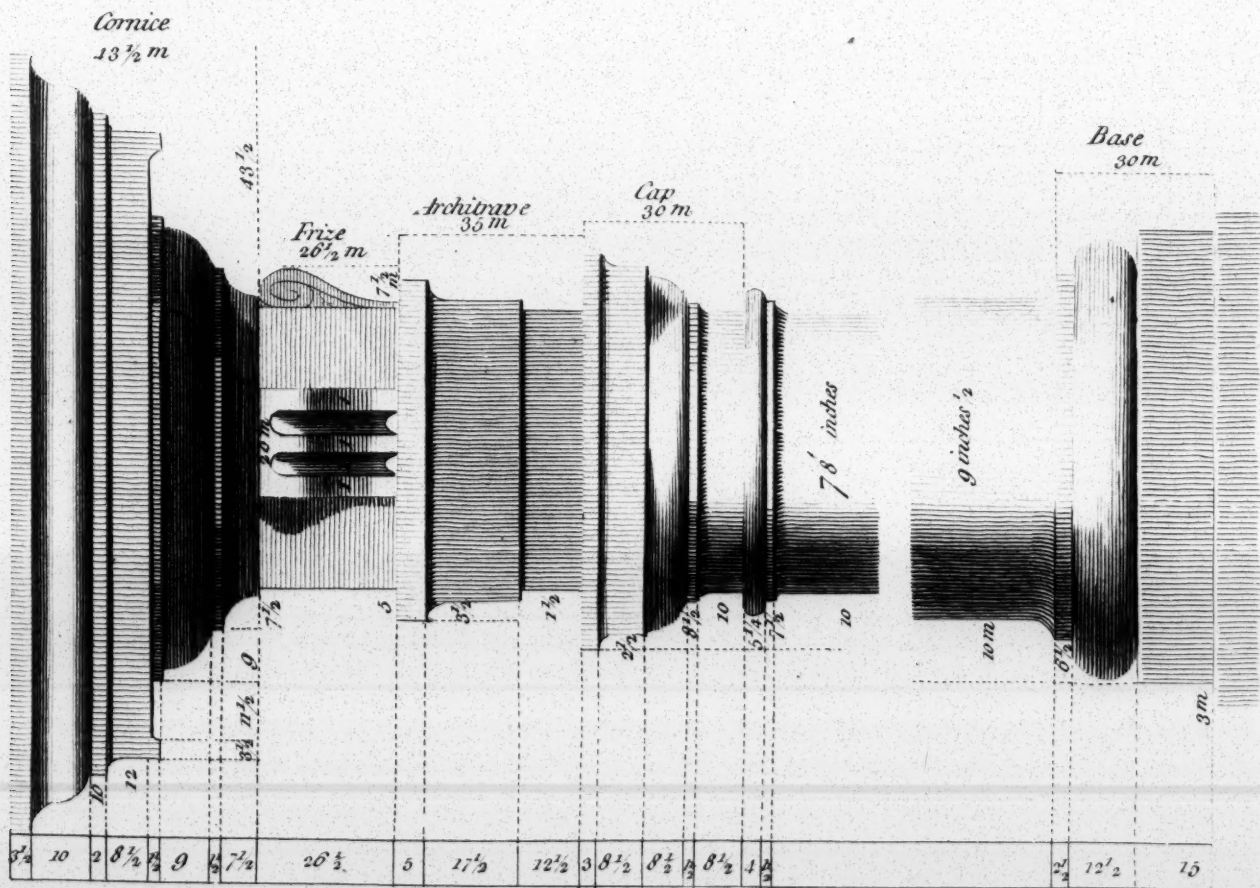


Divide the Door into 4 parts one is the Diameter of the Pilaster.

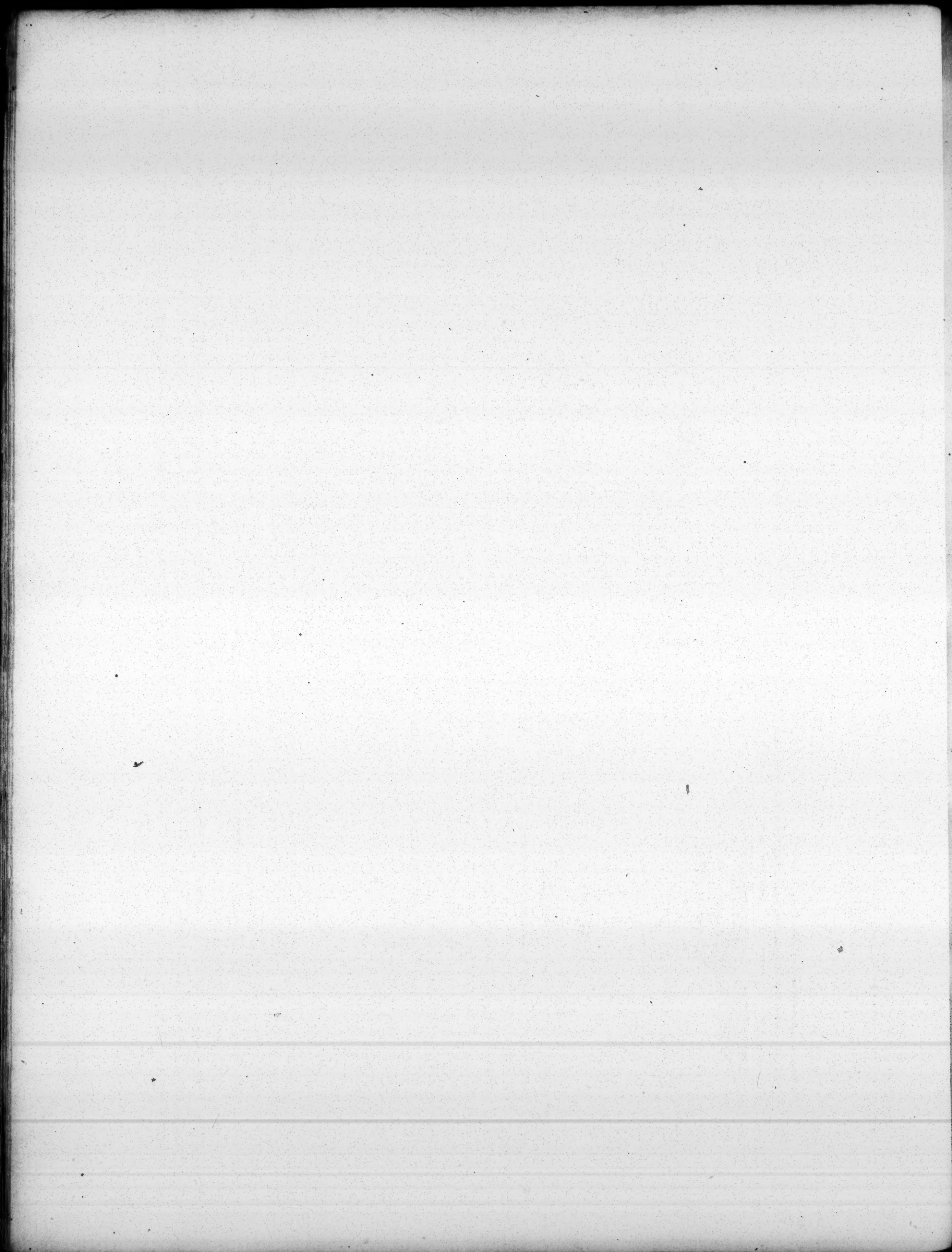
A Scale of one Module.

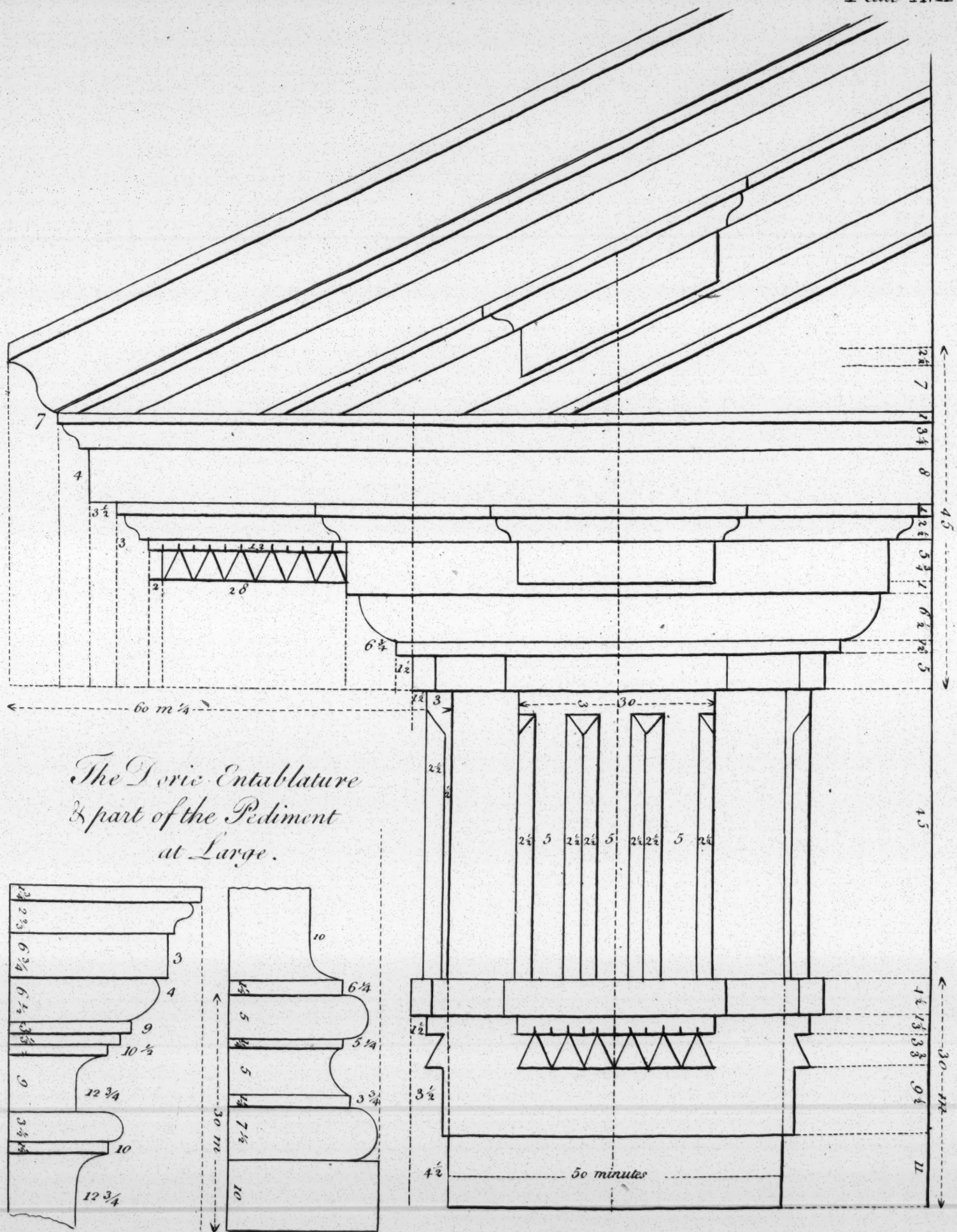


The Tuscan Entablature.







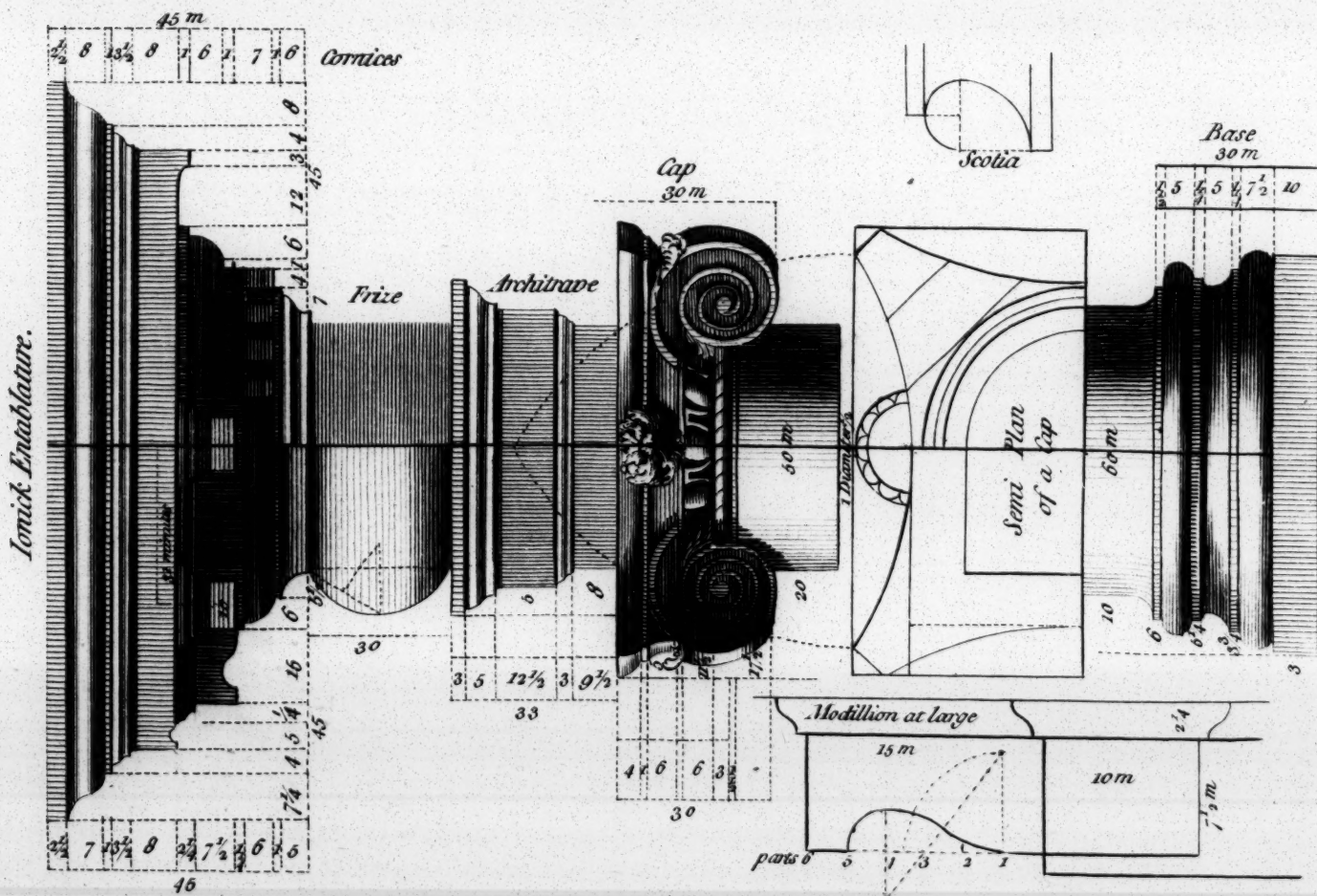
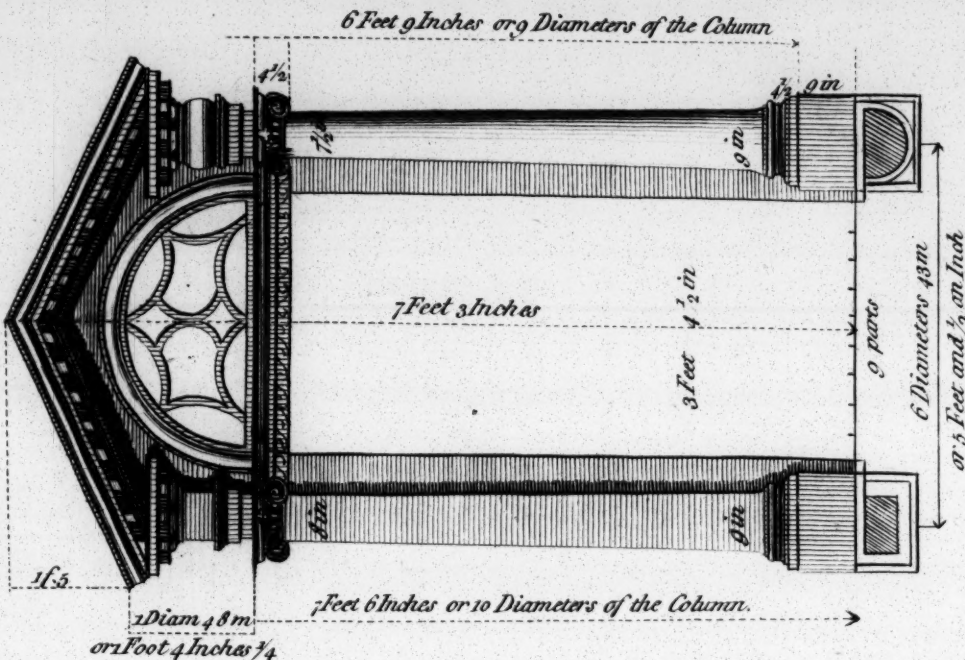


*The Doric Entablature
& part of the Pediment
at Large.*

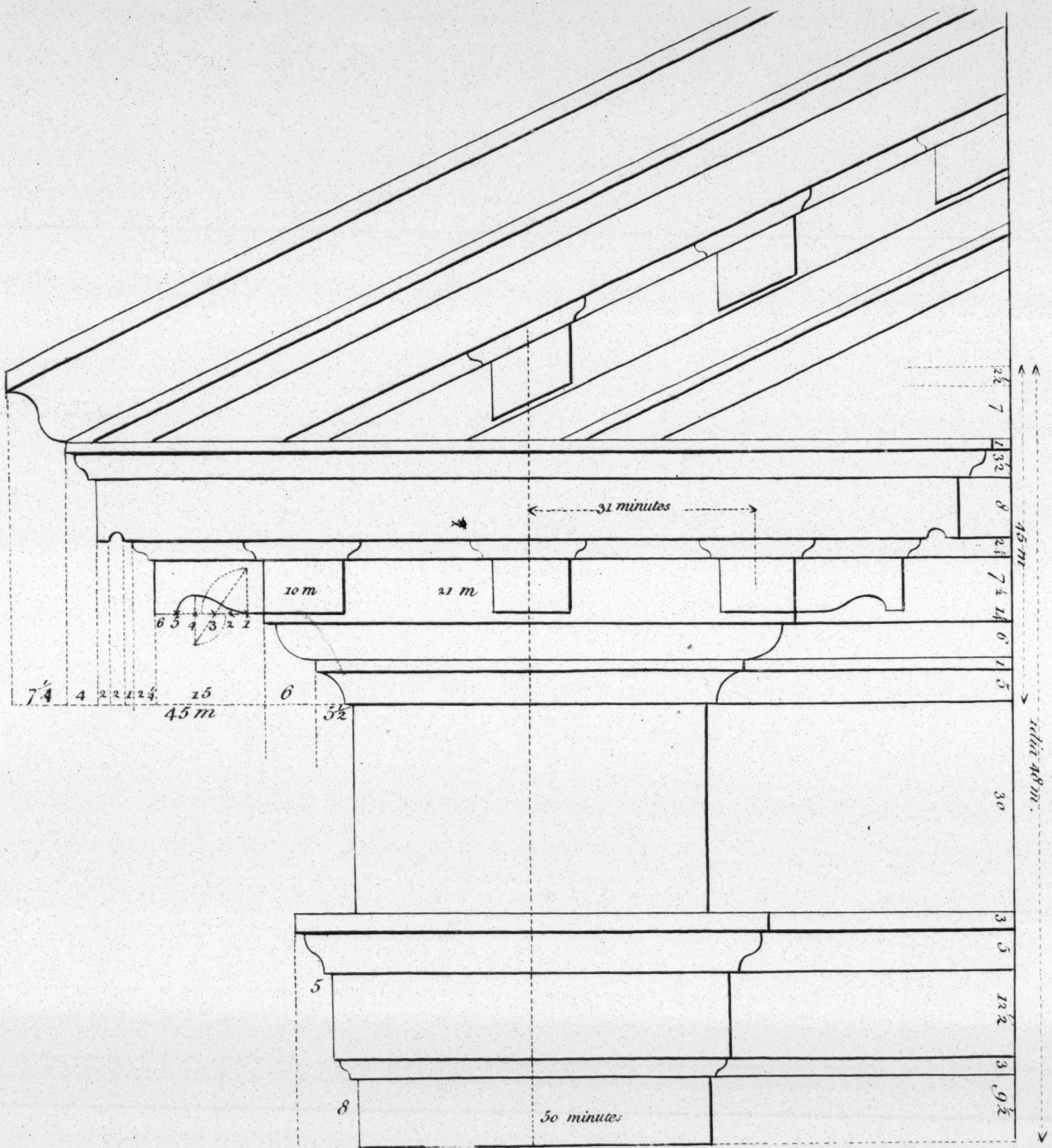


Frontispiece in the Ionick Order:

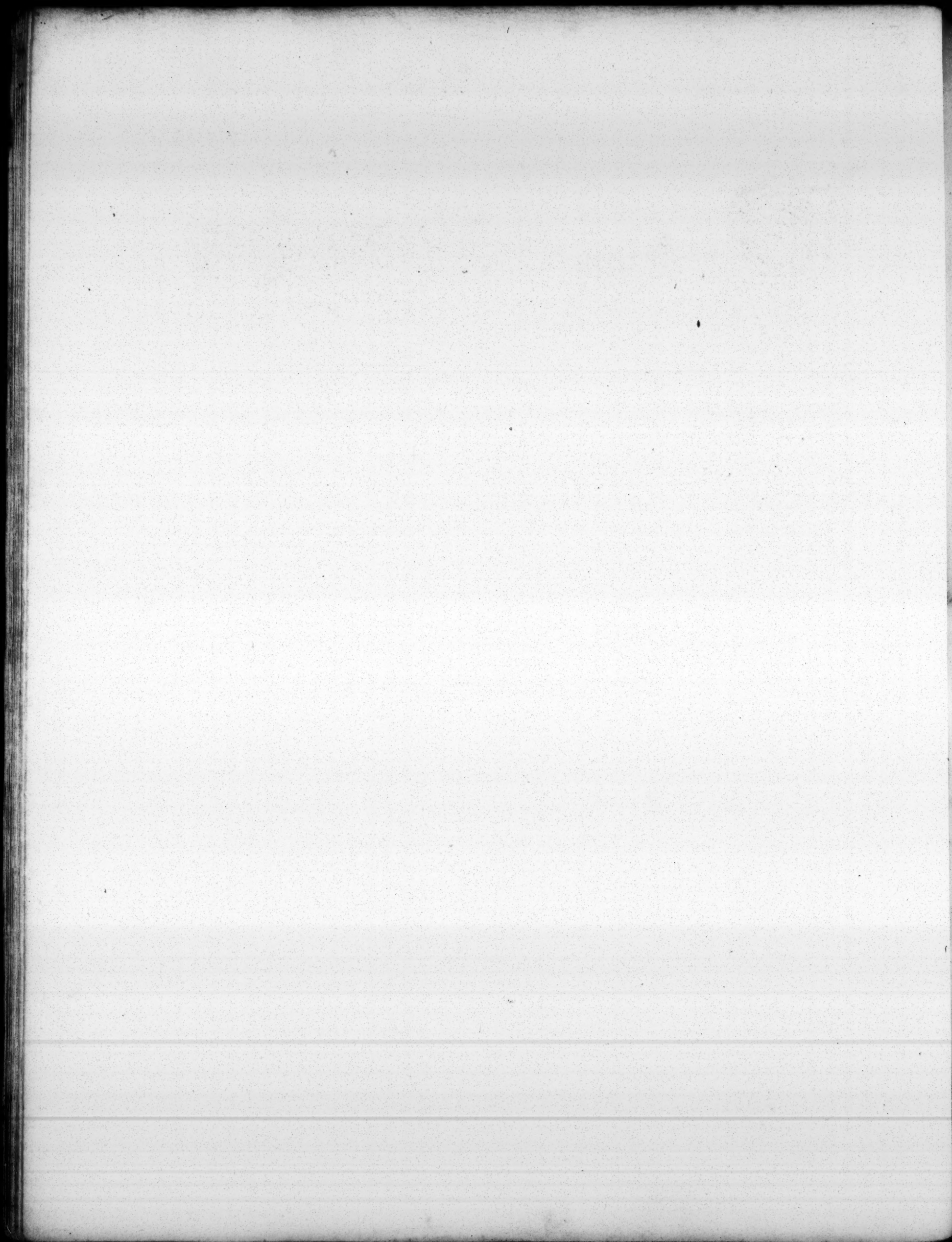
13 Modillions between the Central. Lines of the Columns 31 inches from Center to Center of the Modillions.
Divide the Width of the Door into 9 parts, each part is equal to half the Columns Diameter or 4 Inches $\frac{1}{2}$.



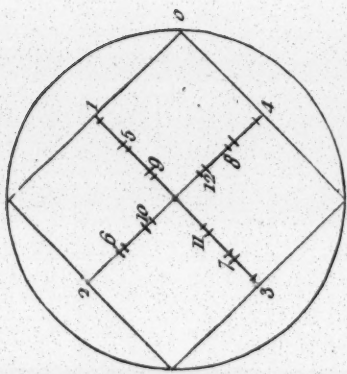
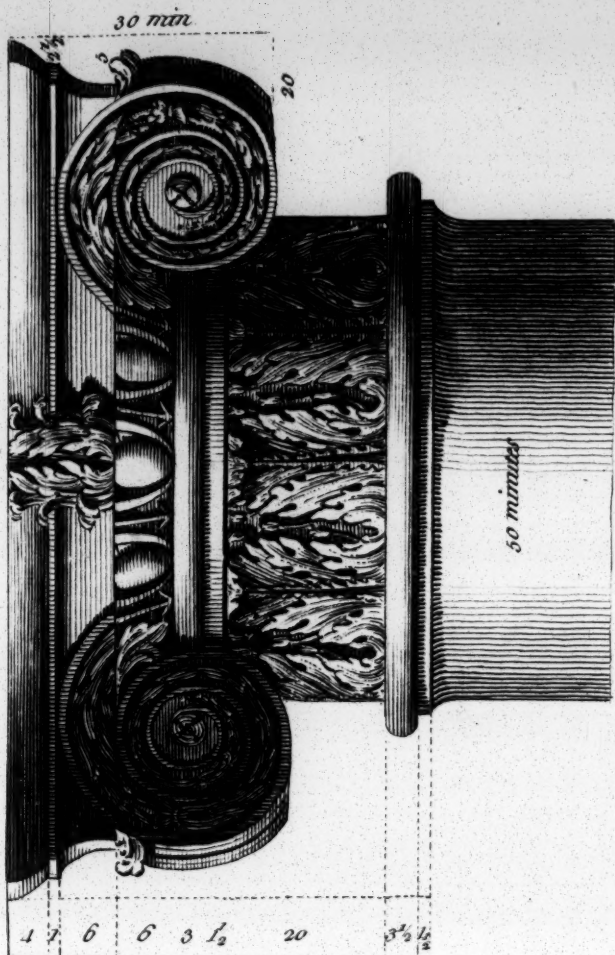




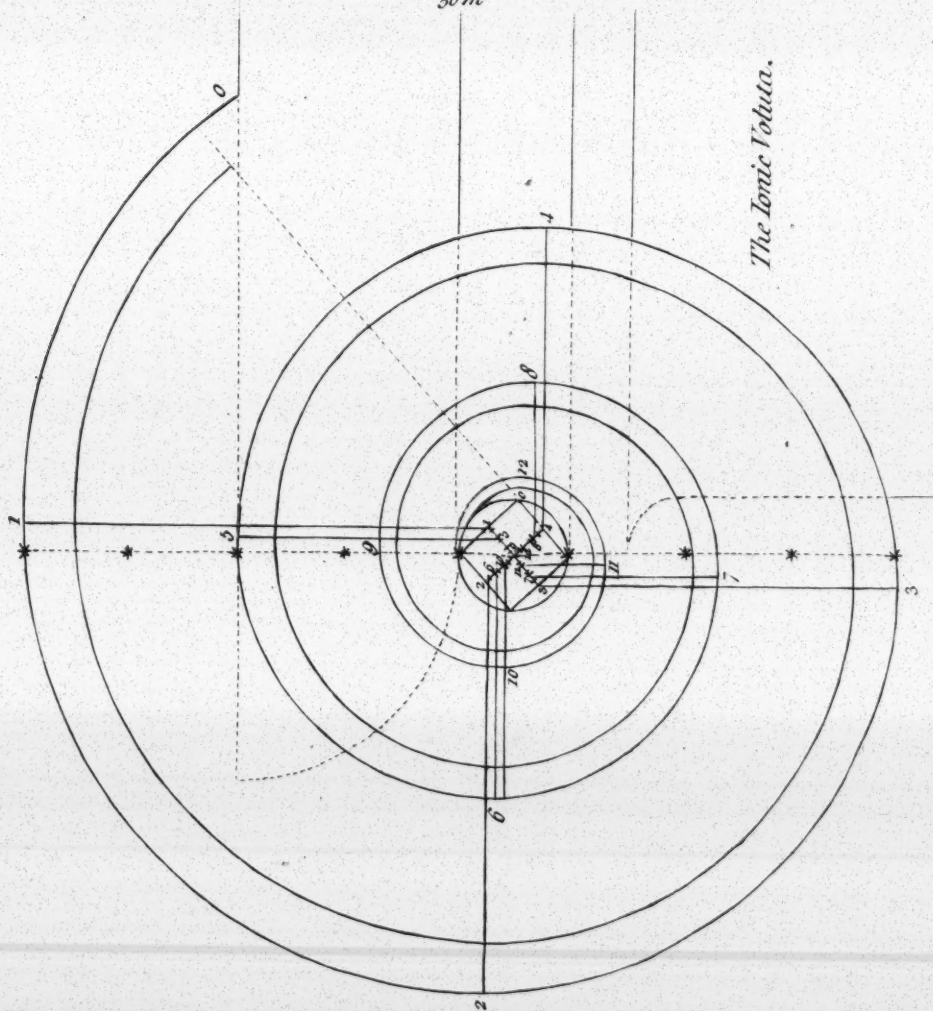
The Ionic Entablature with part of the Pediment at Large.



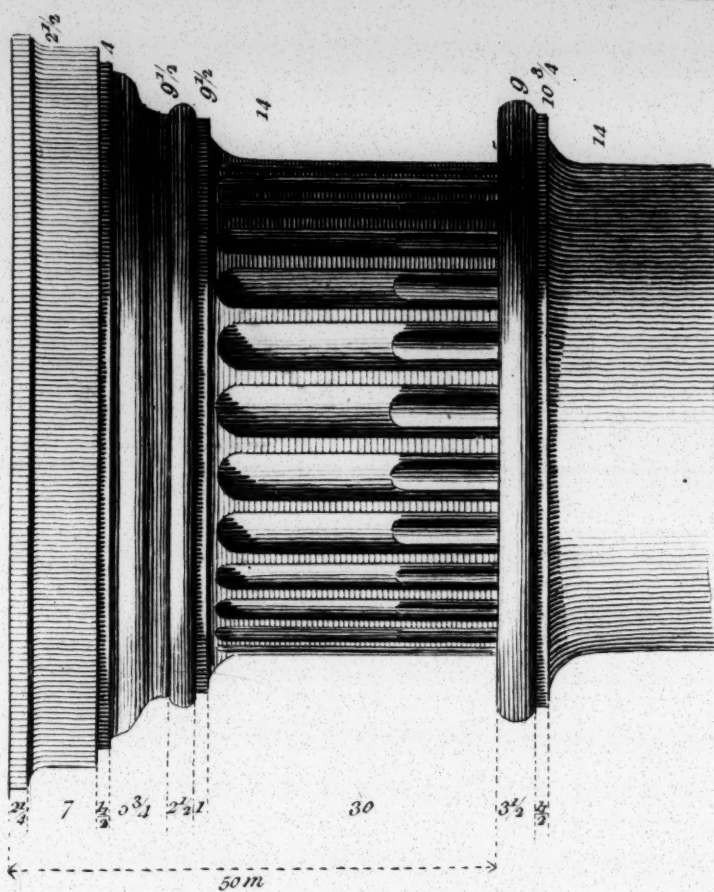
A Modern Ionic Capital, with Leaves



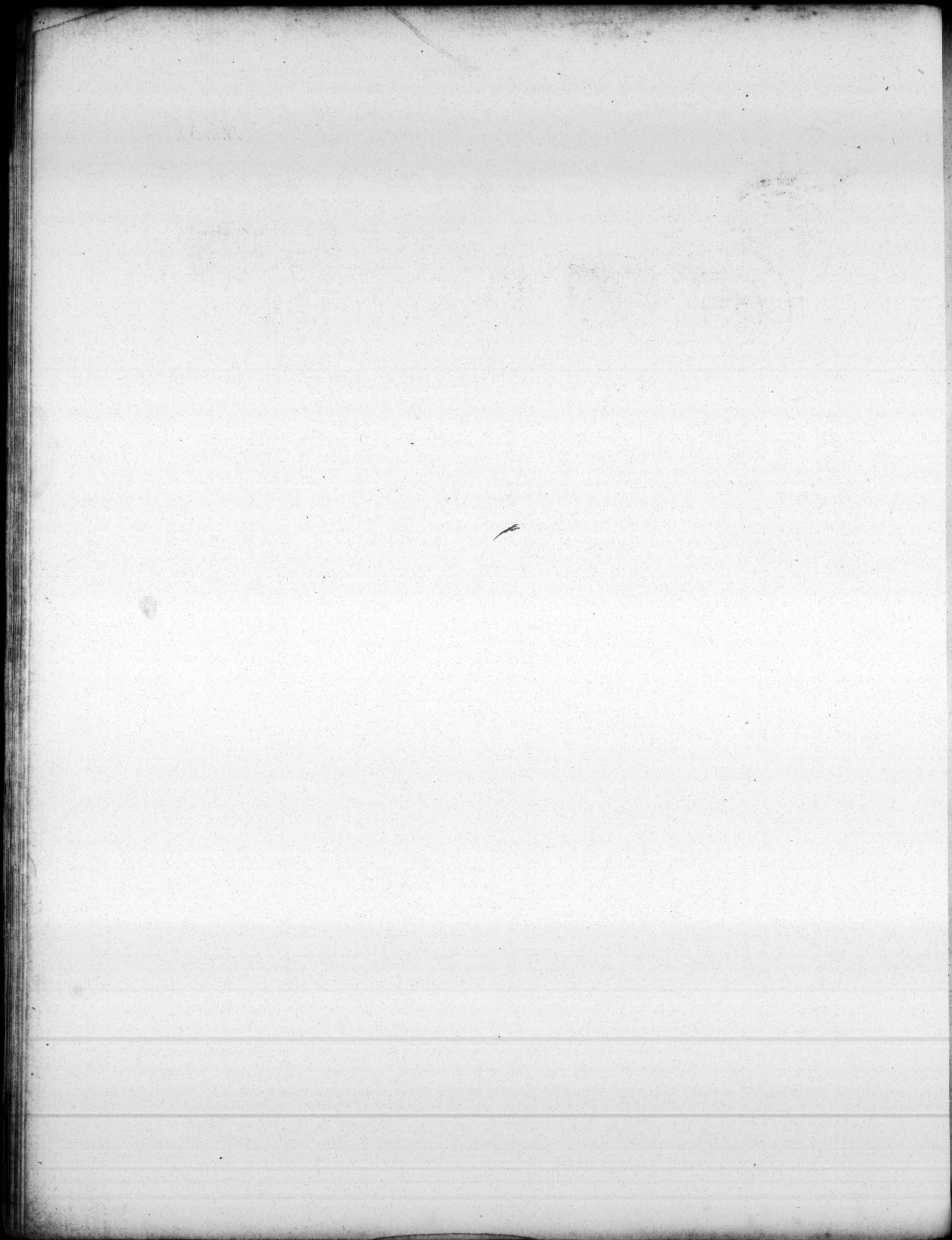
The Eye of the Volute at large.

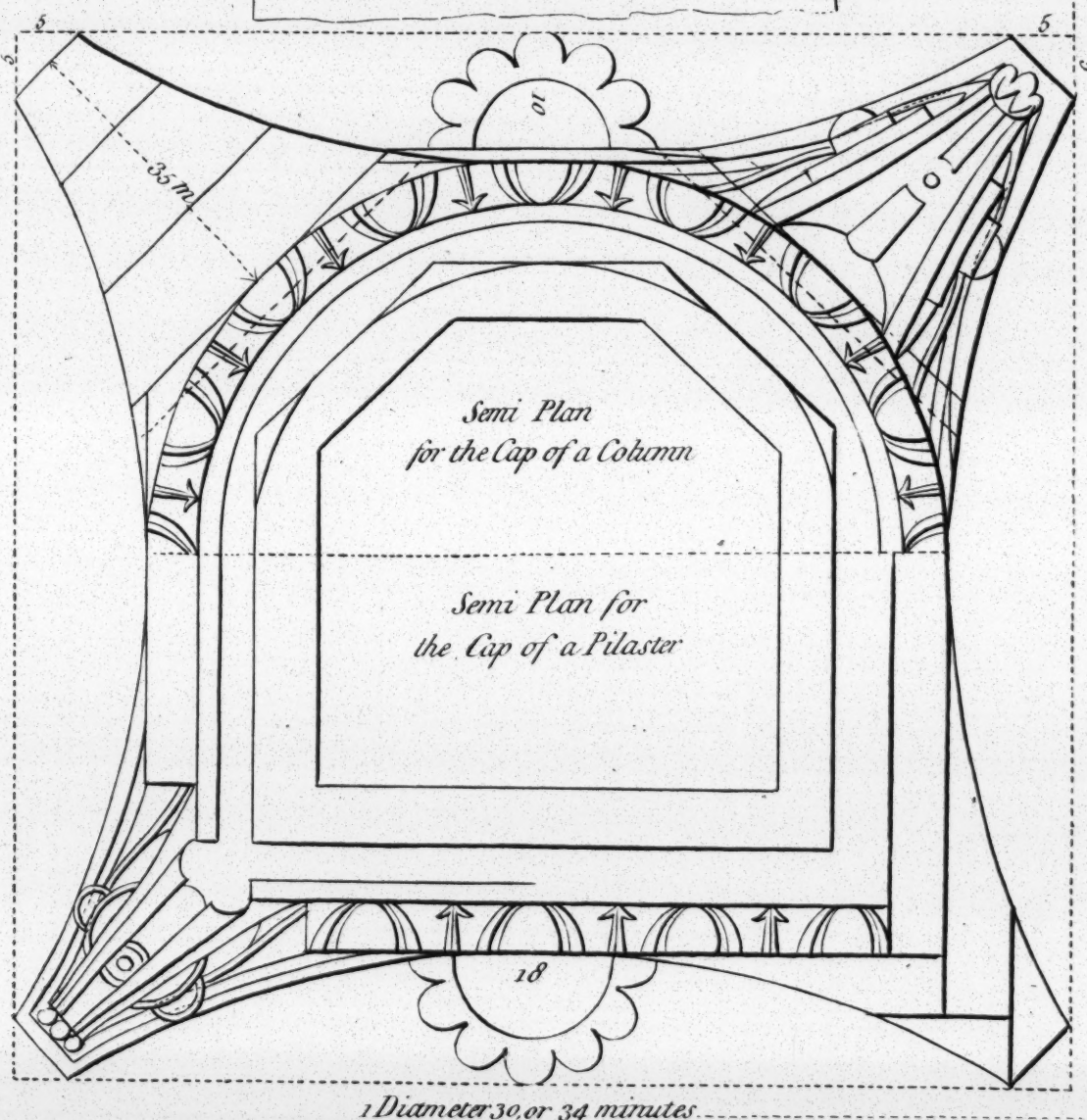
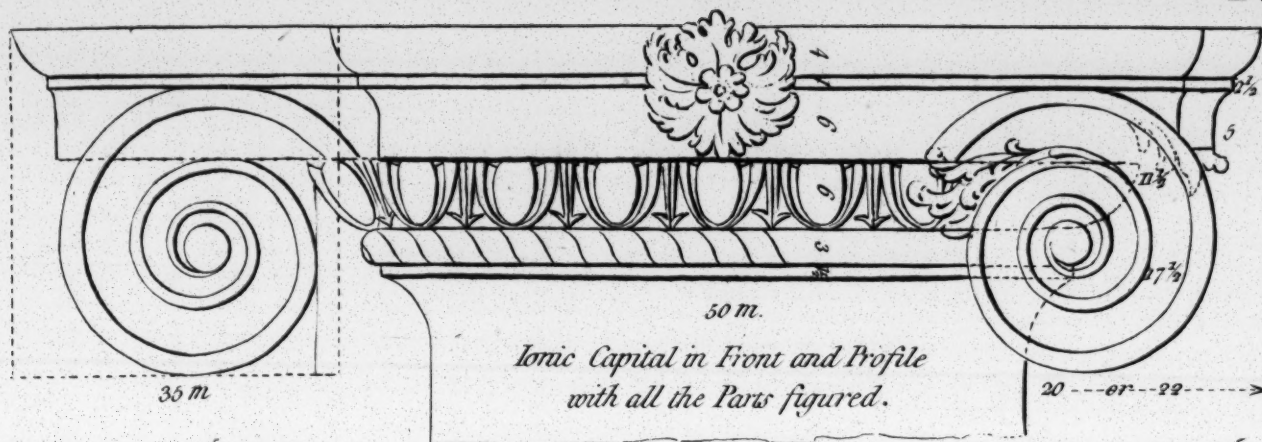


The Ionic Volute.

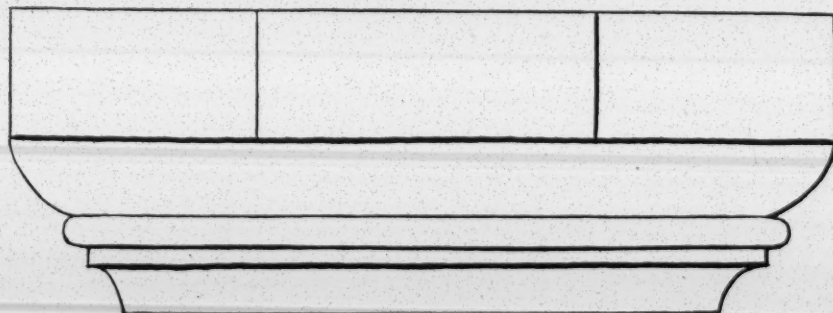


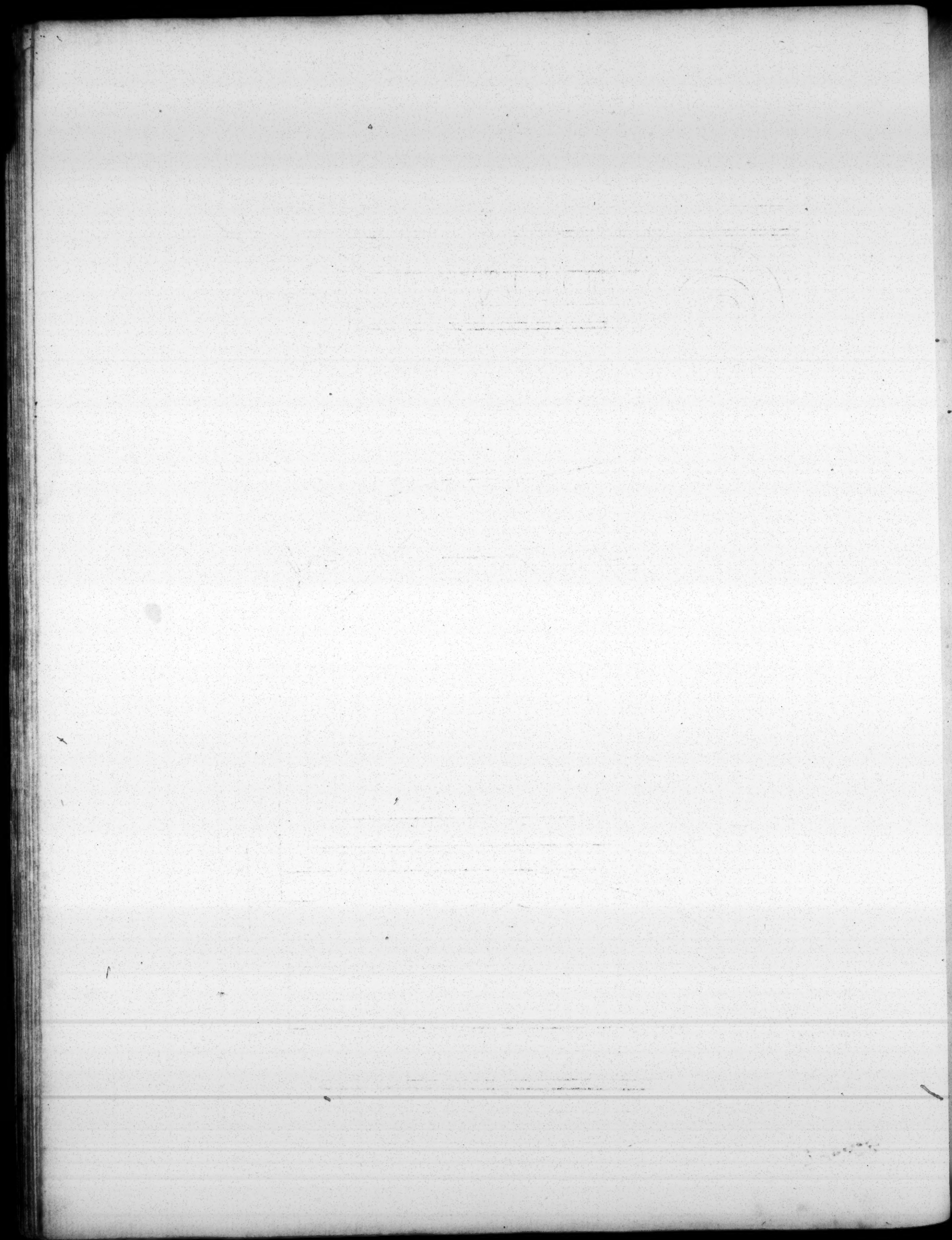
A Composed Cap for a Column.



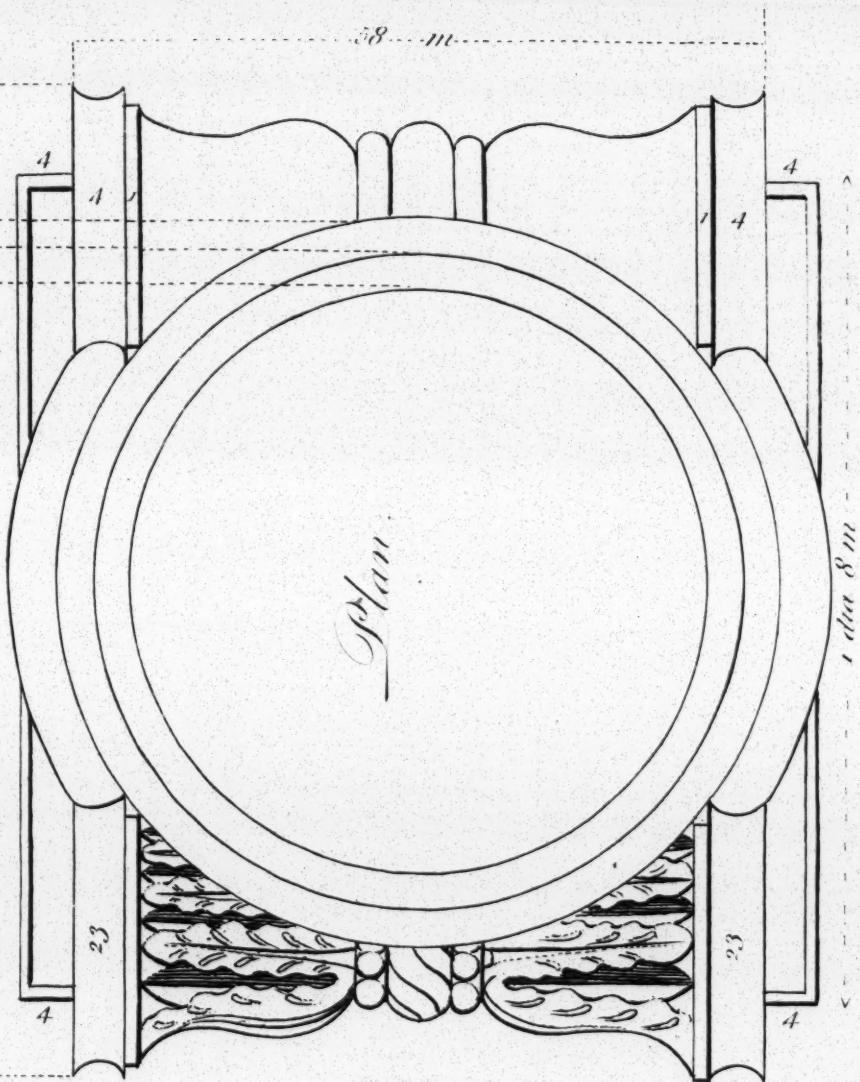
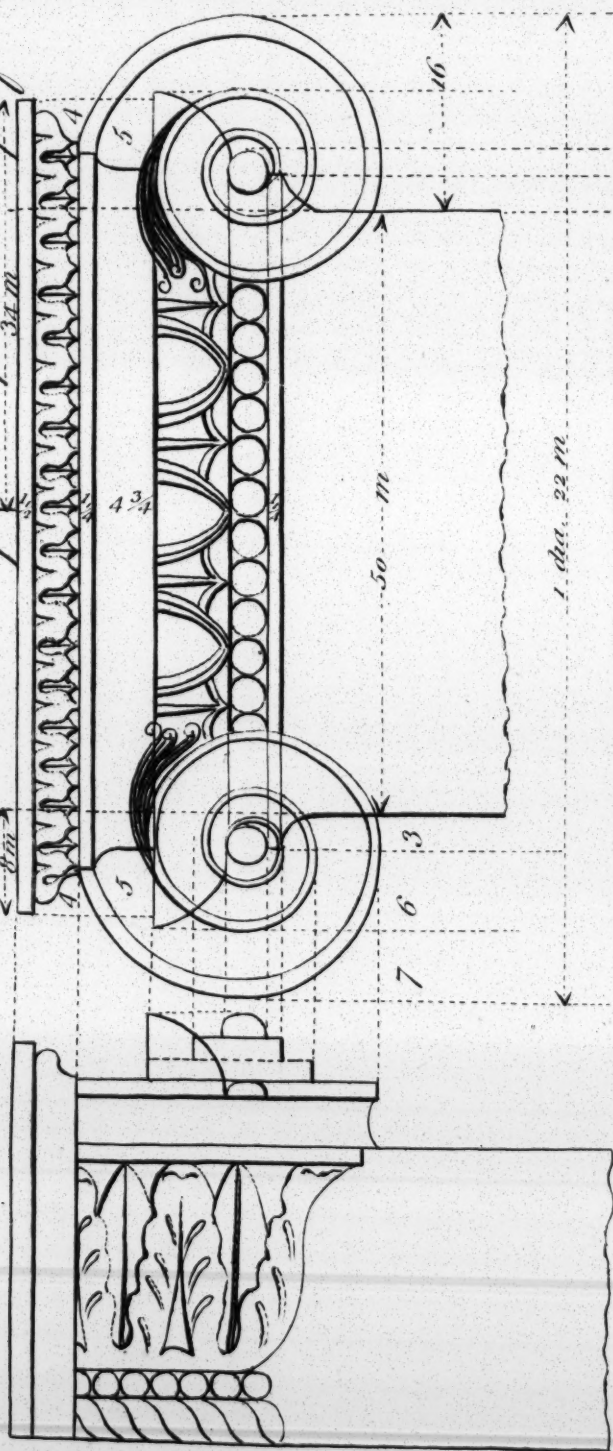
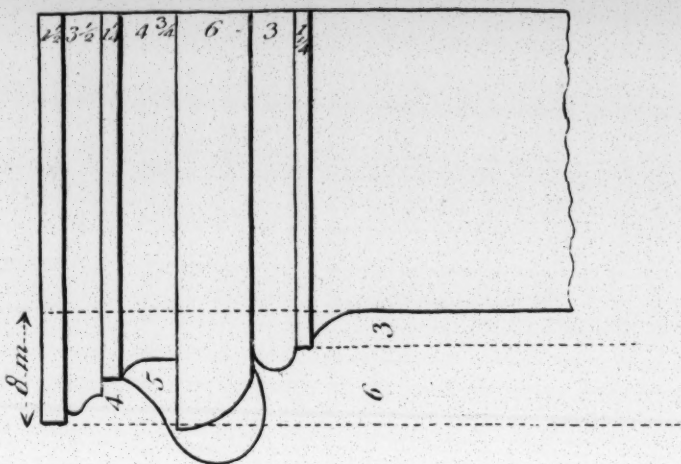


*The Body of the Cap with
the Mouldings worked
before the Horns are
Glued on.*

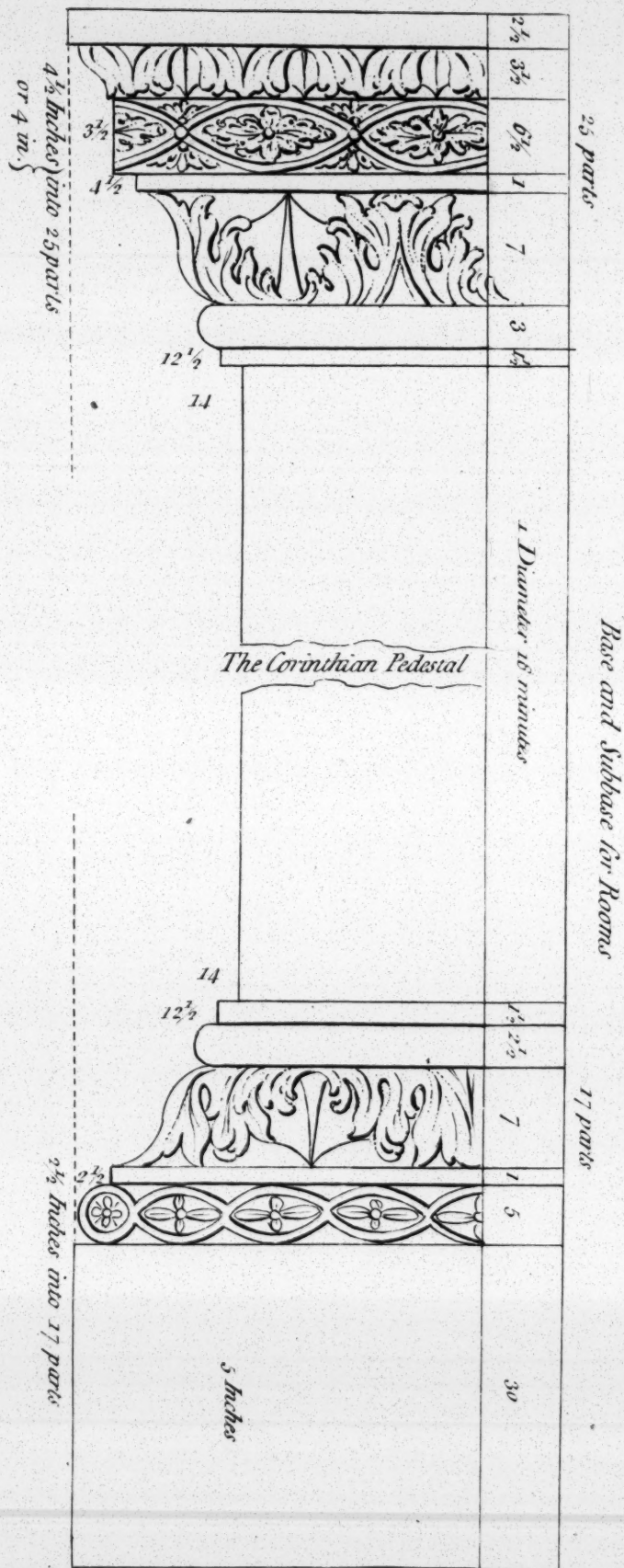
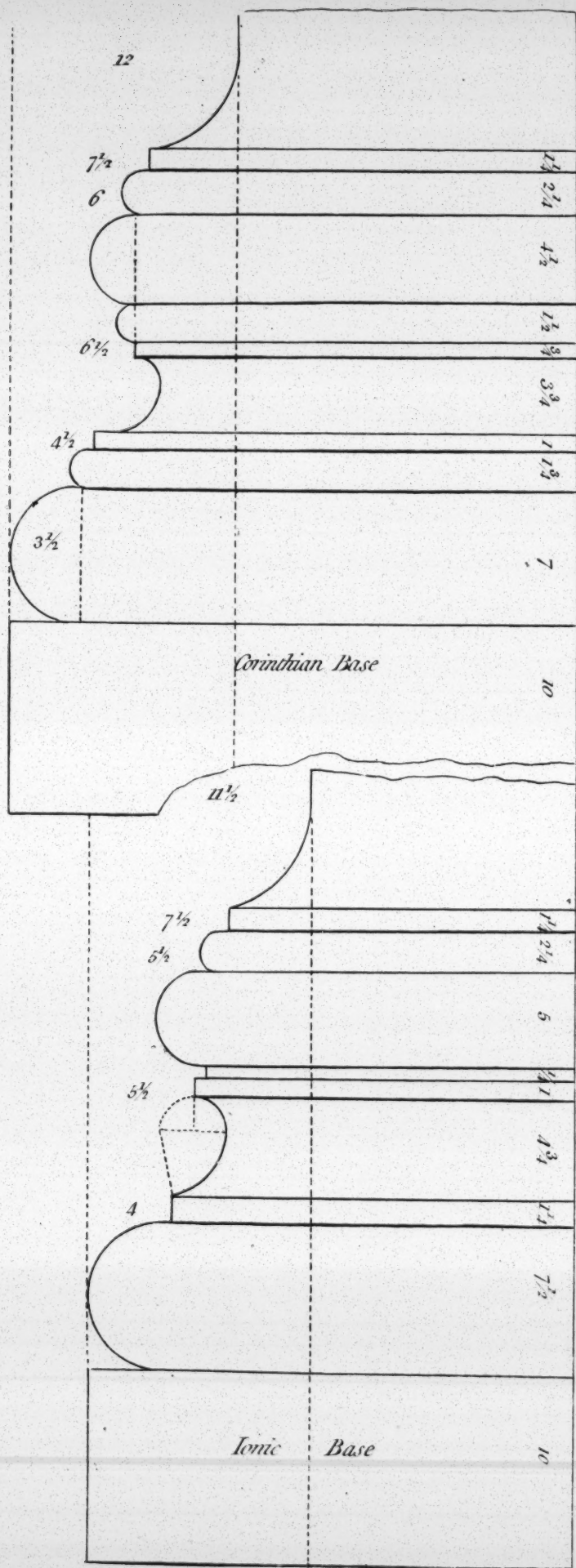




The Antique Ionic Capital in front and profile.

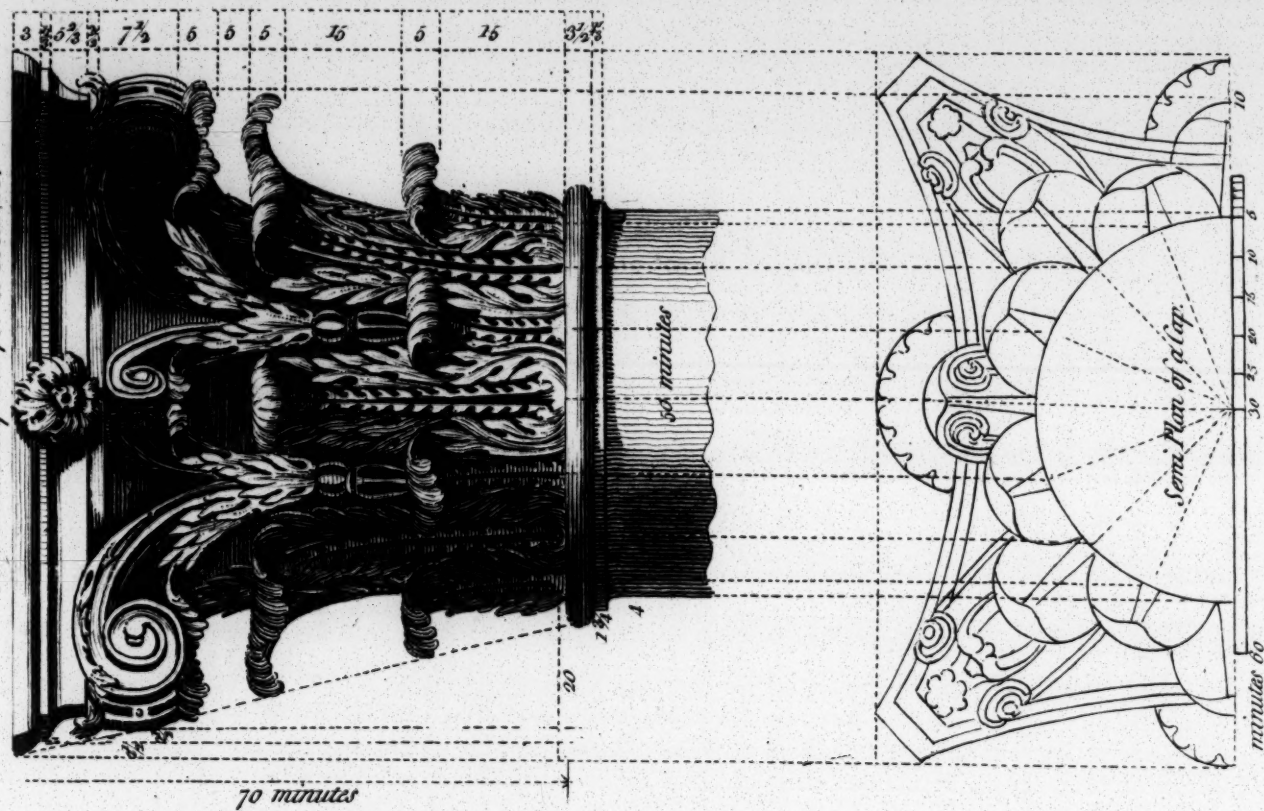




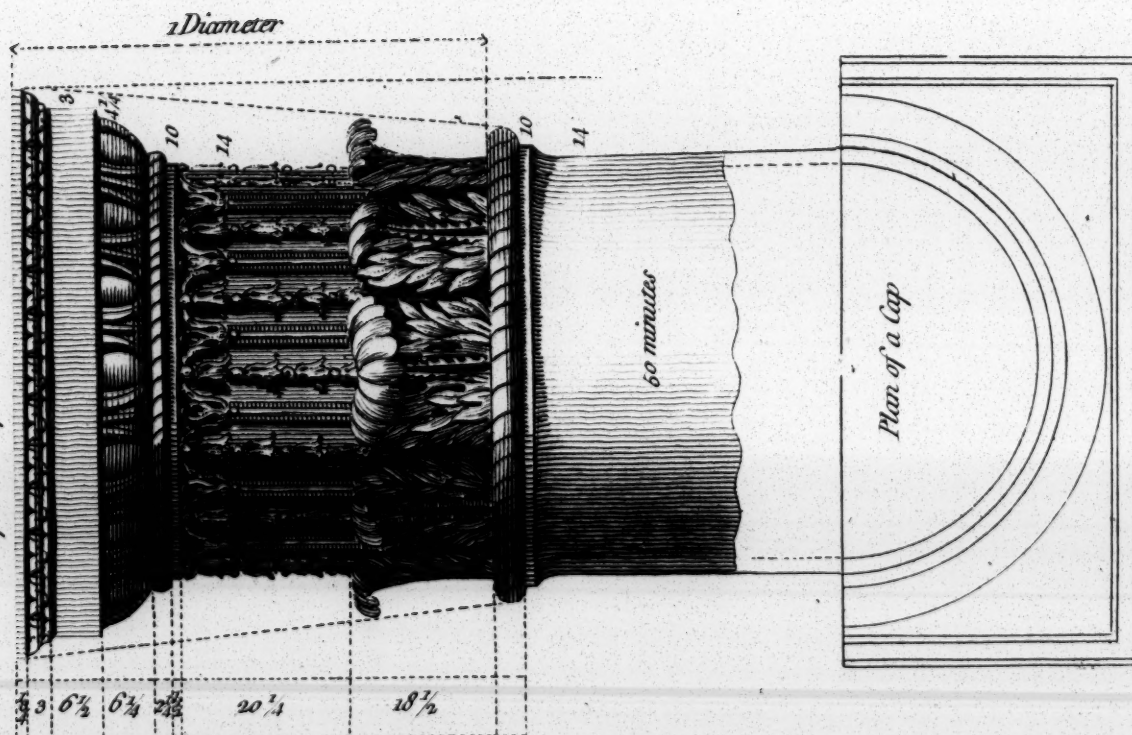


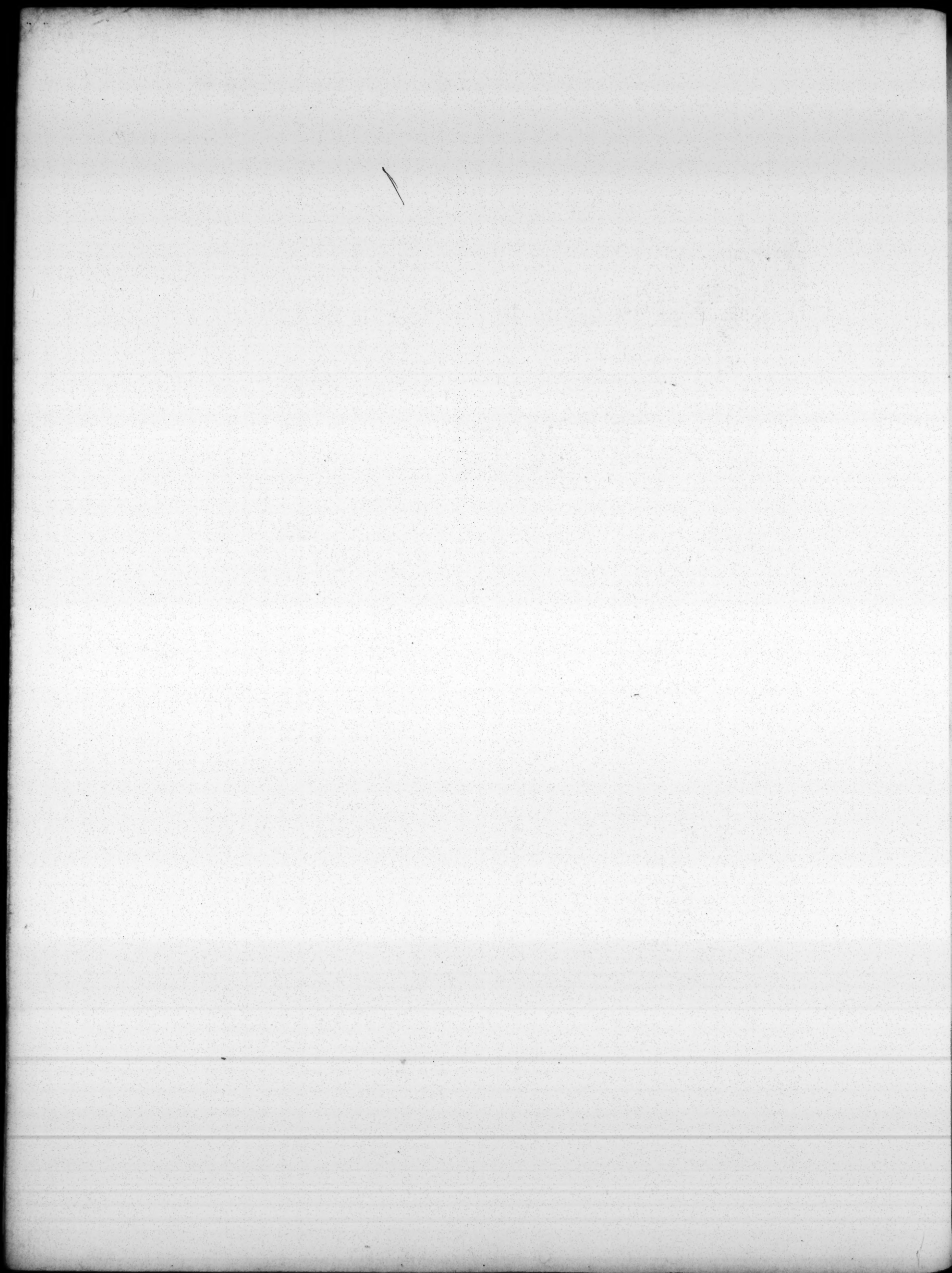


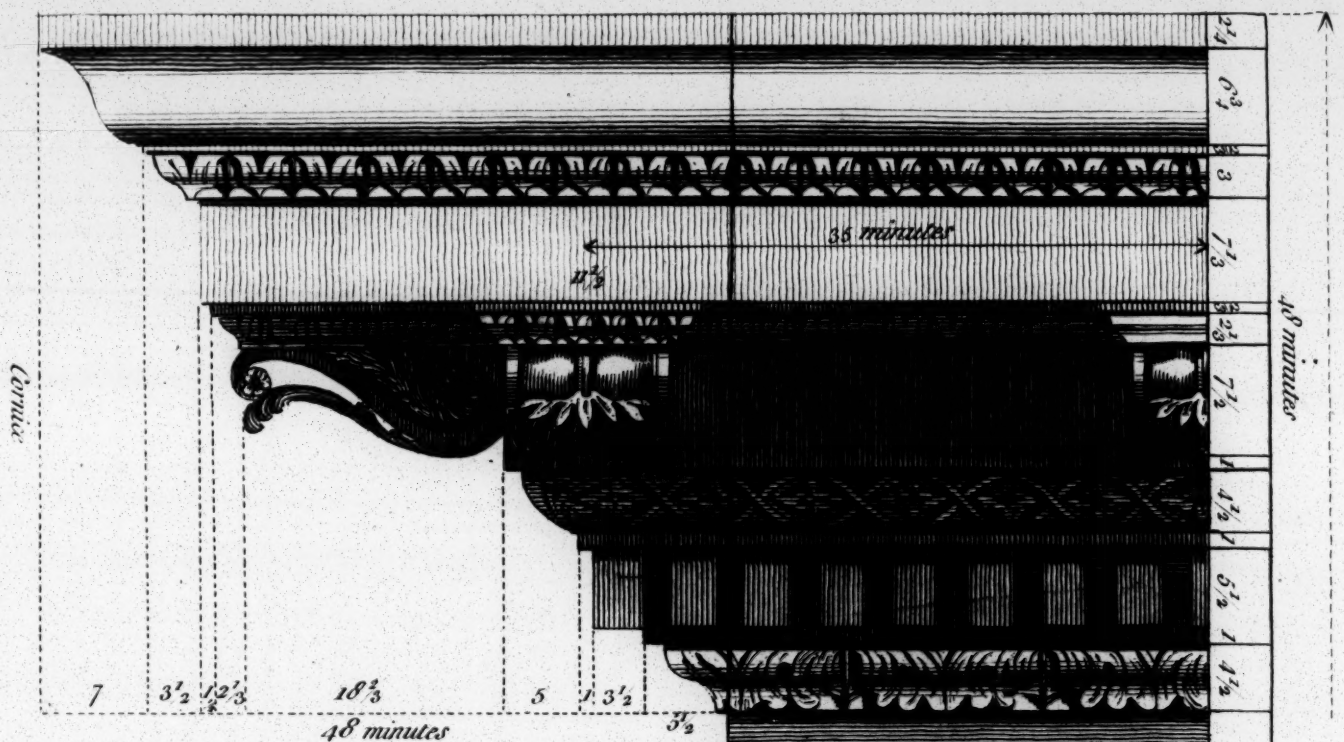
Corinthian Capital for a Column.



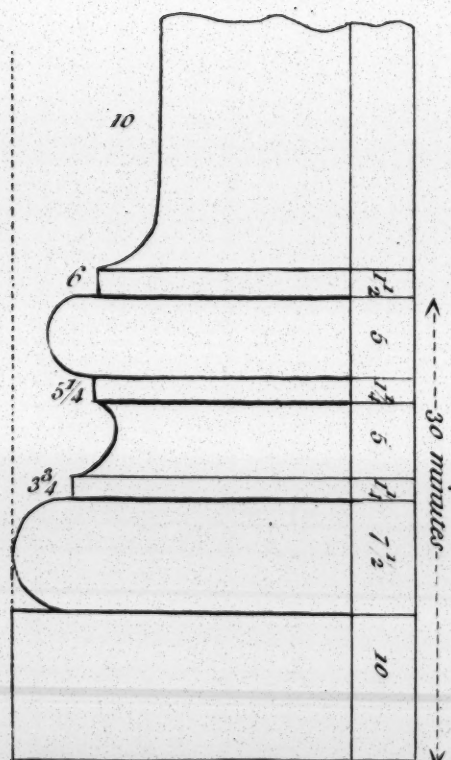
*A Modern
Composed Capital for a Column.*



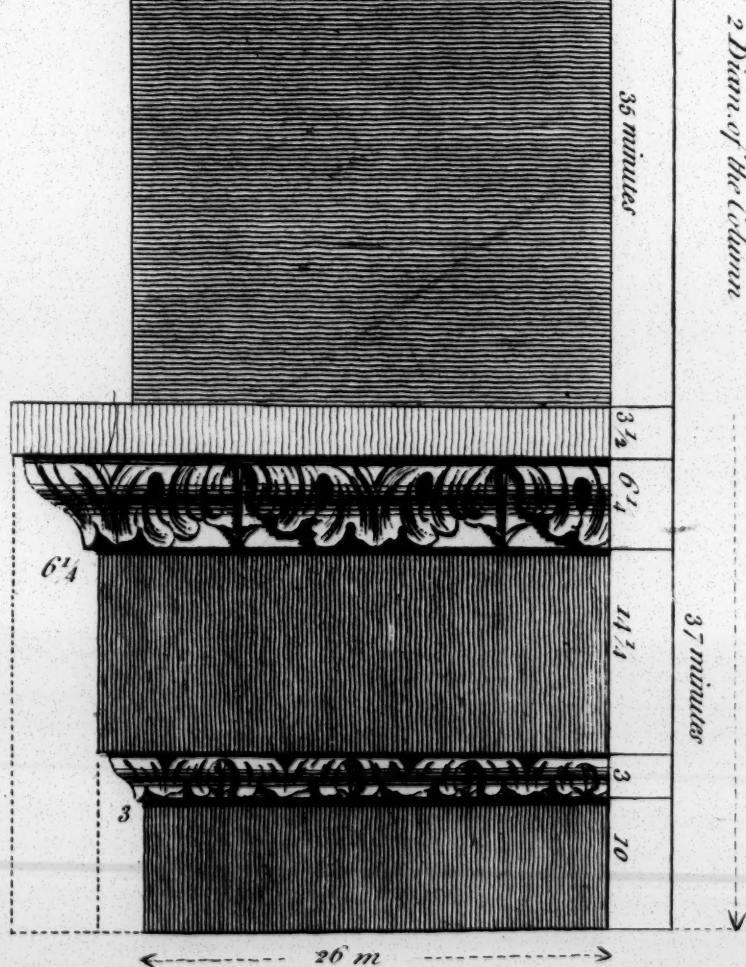




The Corinthian Entablature.



Attick Base to Duto.





(To face PLATE XXVI.)

The Manner of Glewing up the CORINTHIAN CAPITAL.

DR AW half the Plan 1. 2. 3. 4. then draw the Elevation of the Cap Fig. A. wherein the Body of the Cap is glewed up, as 1. 2. 3. 4. in Cants upright, with the Grain the fame as the Shaft of the Column, and the upper Part is a Solid, as represented by a. b. c. d. which contains the Abacus and Volutes; the Tops of the two Tier of Leaves are glewed on separate, as e. f. g. h. j. k. l. which is plain to Inspection.

Note, The upper Part a. b. c. d. to be square, as on the Plan 1. 2. 3. 4. this shews one half of the Cap, which is sufficient to explain the whole.

The Bell of the Cap is sunk two Minutes and an half lower than the Surface of the Body, and the whole Projection of the Bell fix Minutes, as figured.

The manner of gluing up the Corinthian Capital. Plate XXVI

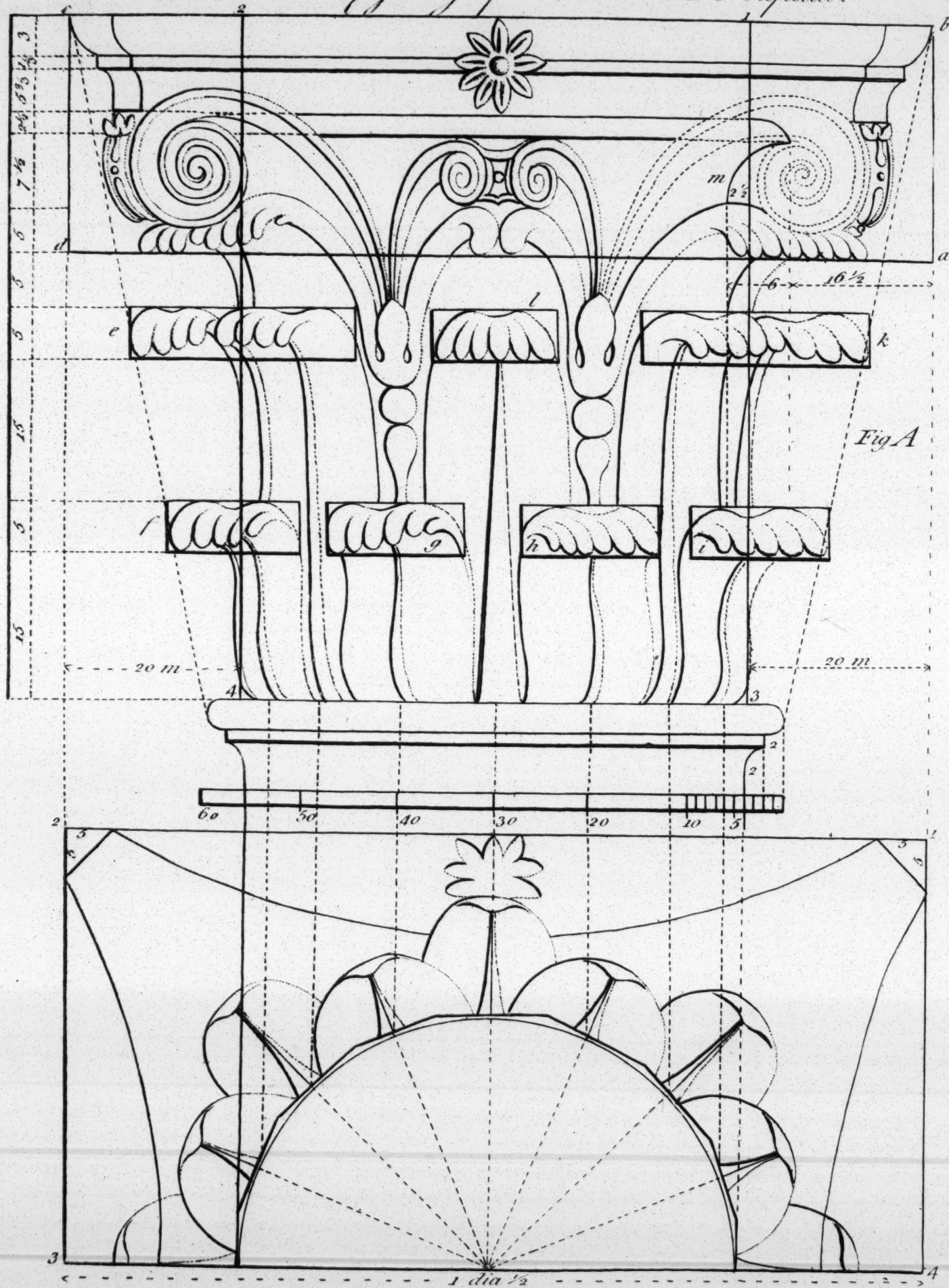
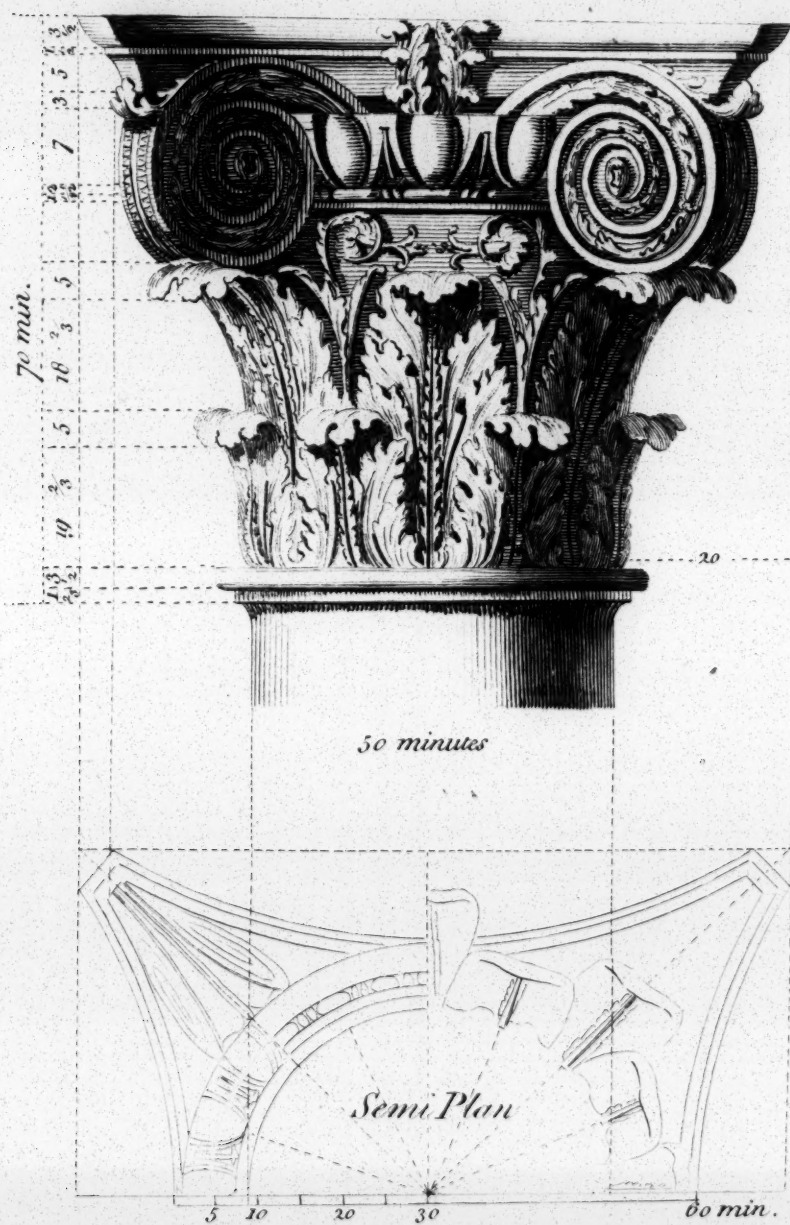




Plate XVII.

The Ancient Composite or Roman Capital



The Proportions of Composite Entablature are the same as the Corinthian.

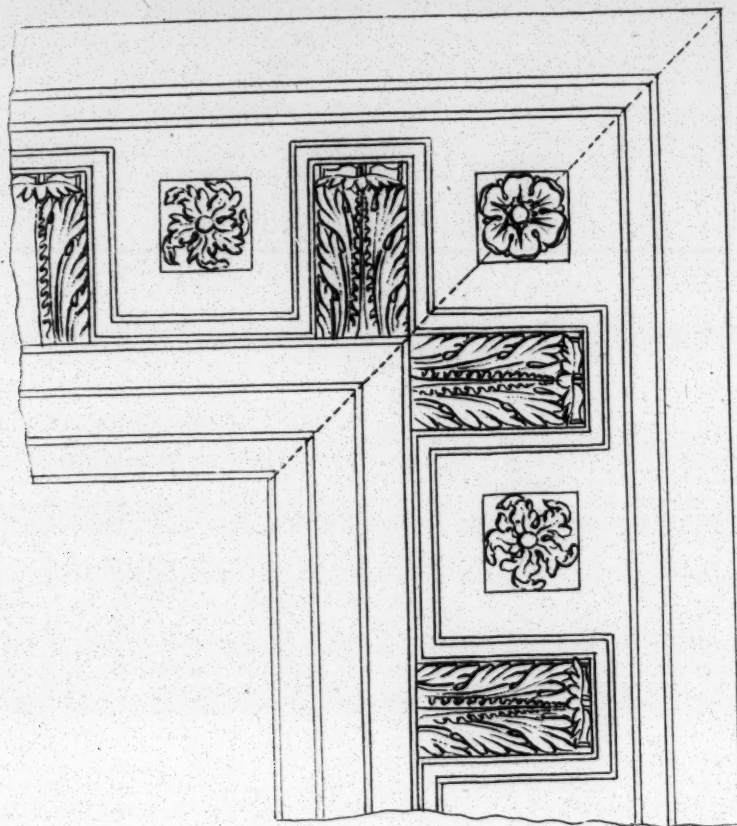
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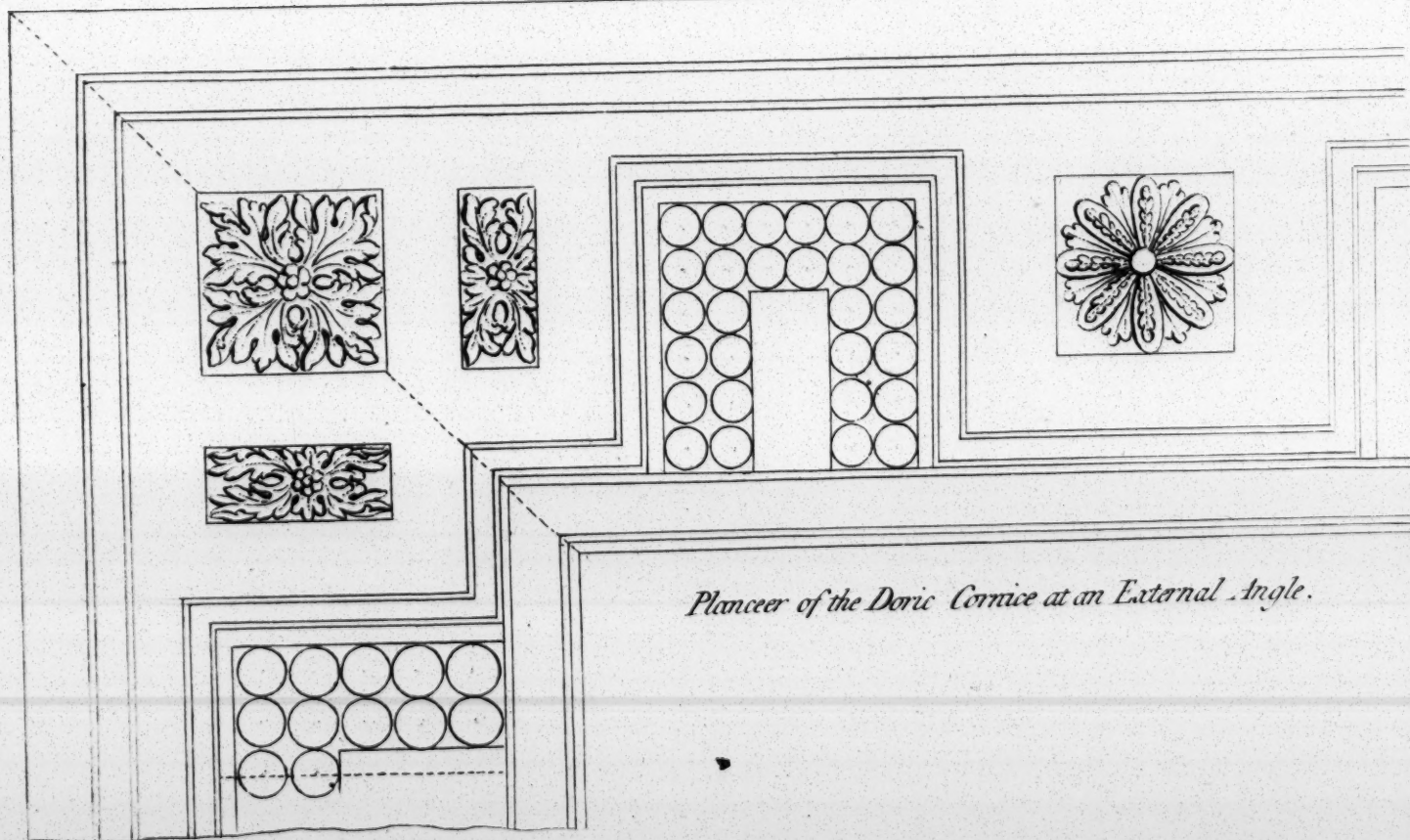
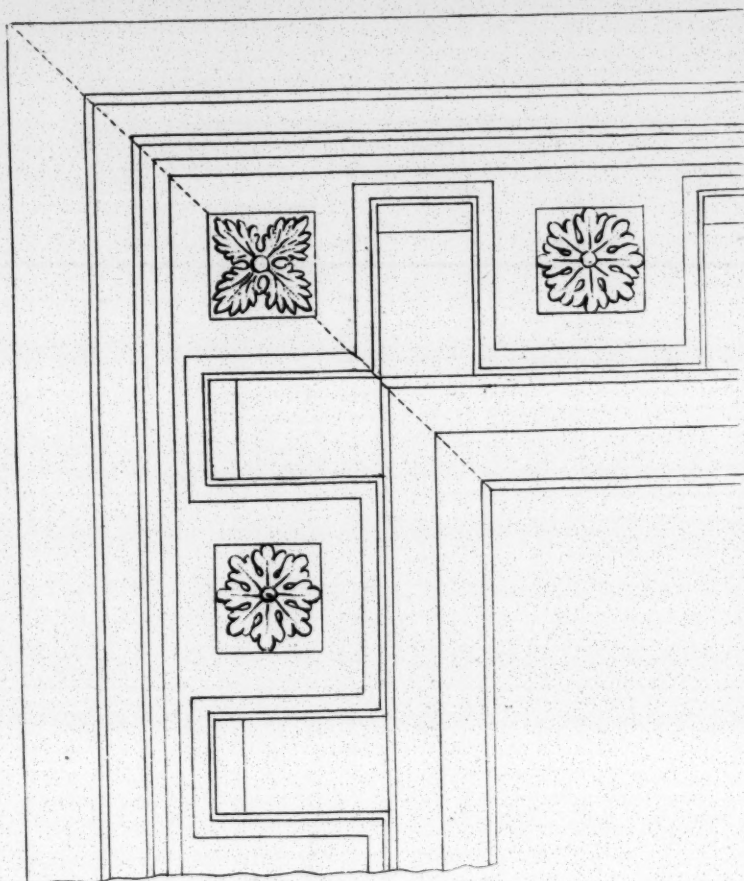
may be used with the Attic Base.



Planceer of the Corinthian Cornice at an External Angle.



Planceer of the Ionic Cornice at an External Angle.

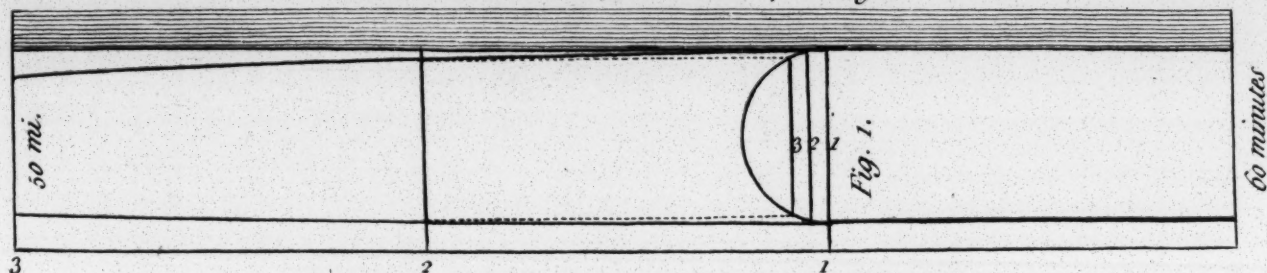


Planceer of the Doric Cornice at an External Angle.



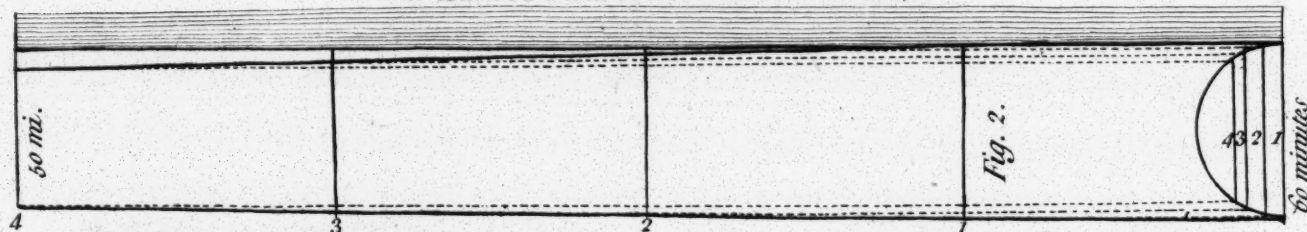
Glueing of Columns.

This Column Diminishes from one third of the Height.



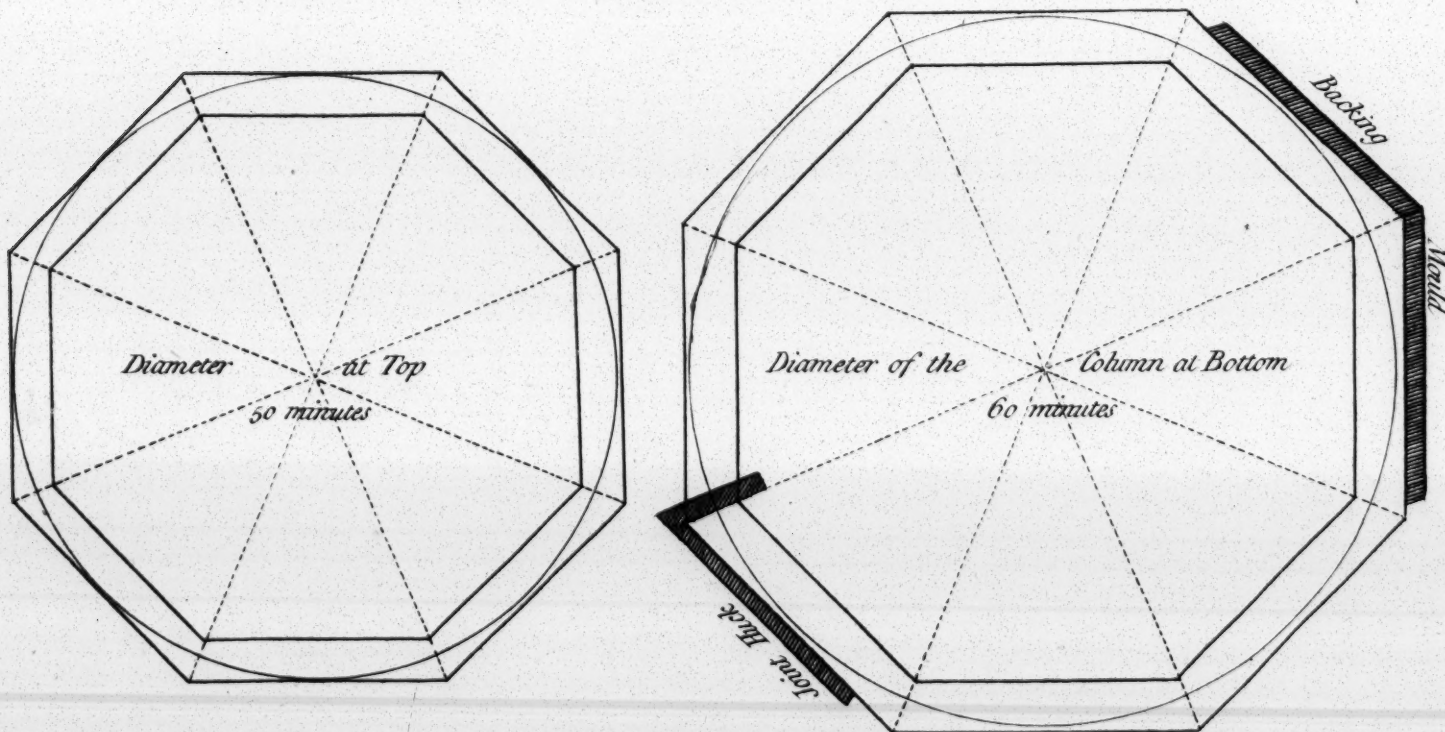
The manner of Glueing up Columns & Diminishing them

This Column Diminishes from the Bottom to the Top



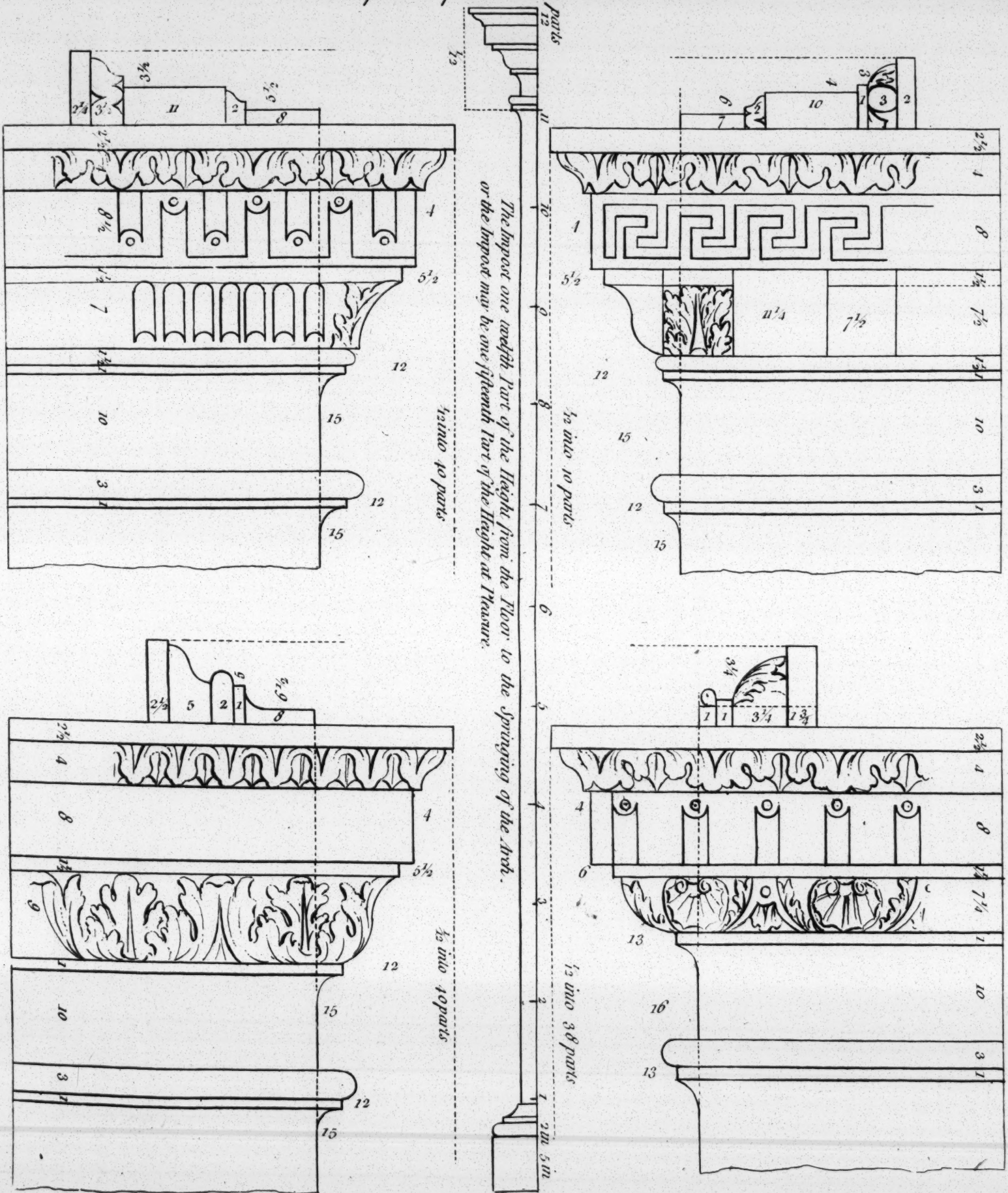
When Columns are fluted divide the Round or Circumference into 96 parts give three to a Flute and one to a Fillet.

Diminish the Staves of the Columns on the Faces before they are Glued together, this is a very safe and sure way for making the Column.



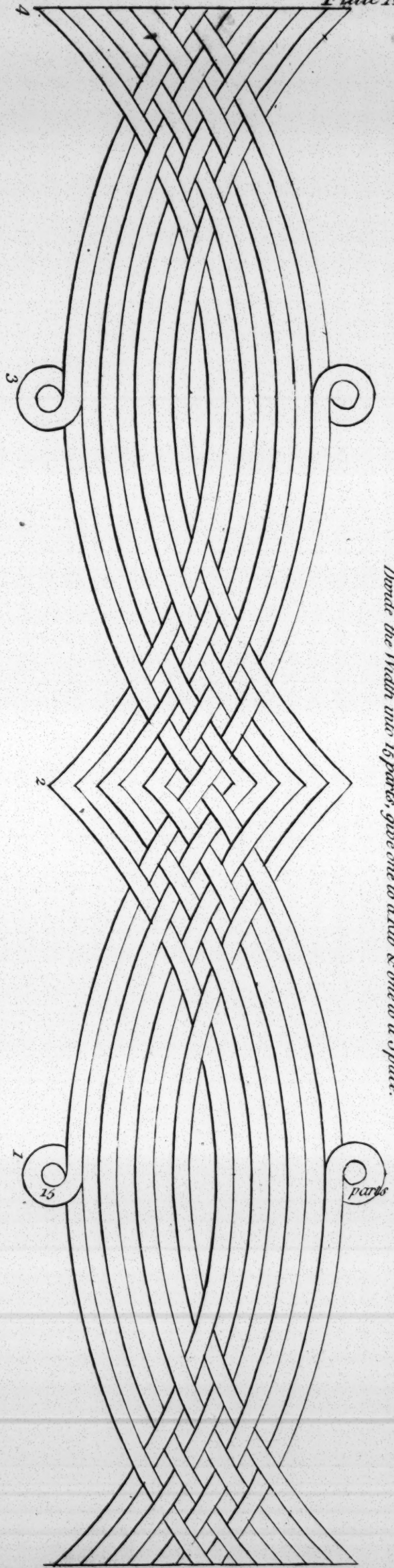
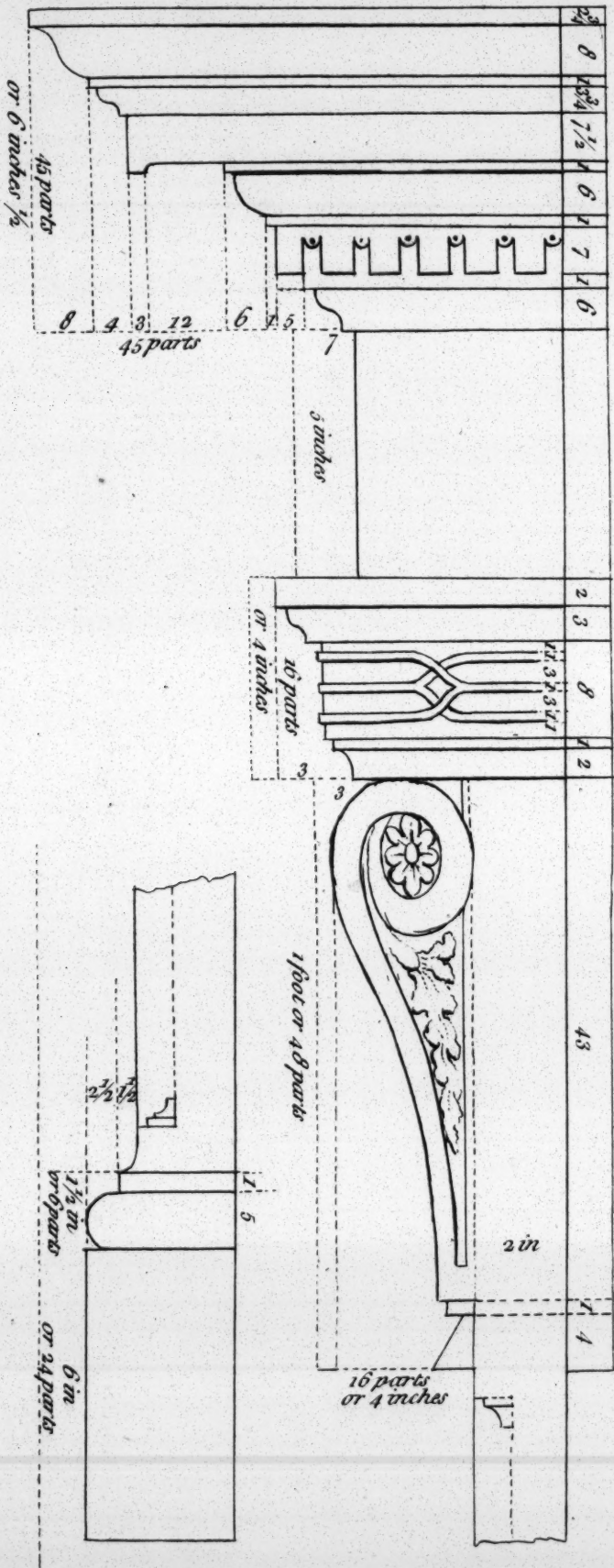
When Pilasters are Fluted divide the Breadth or Diameter into 29 parts give one to a Fillet and three to a Flute.







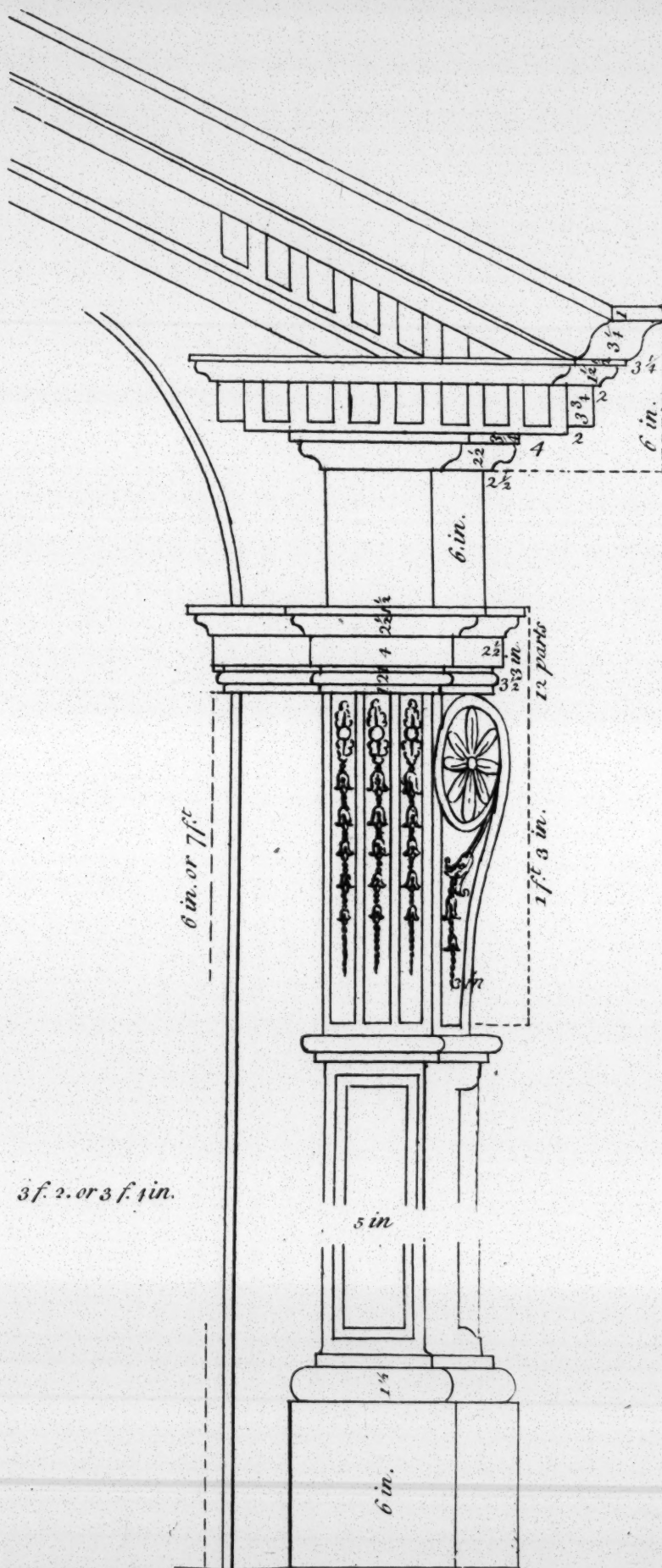
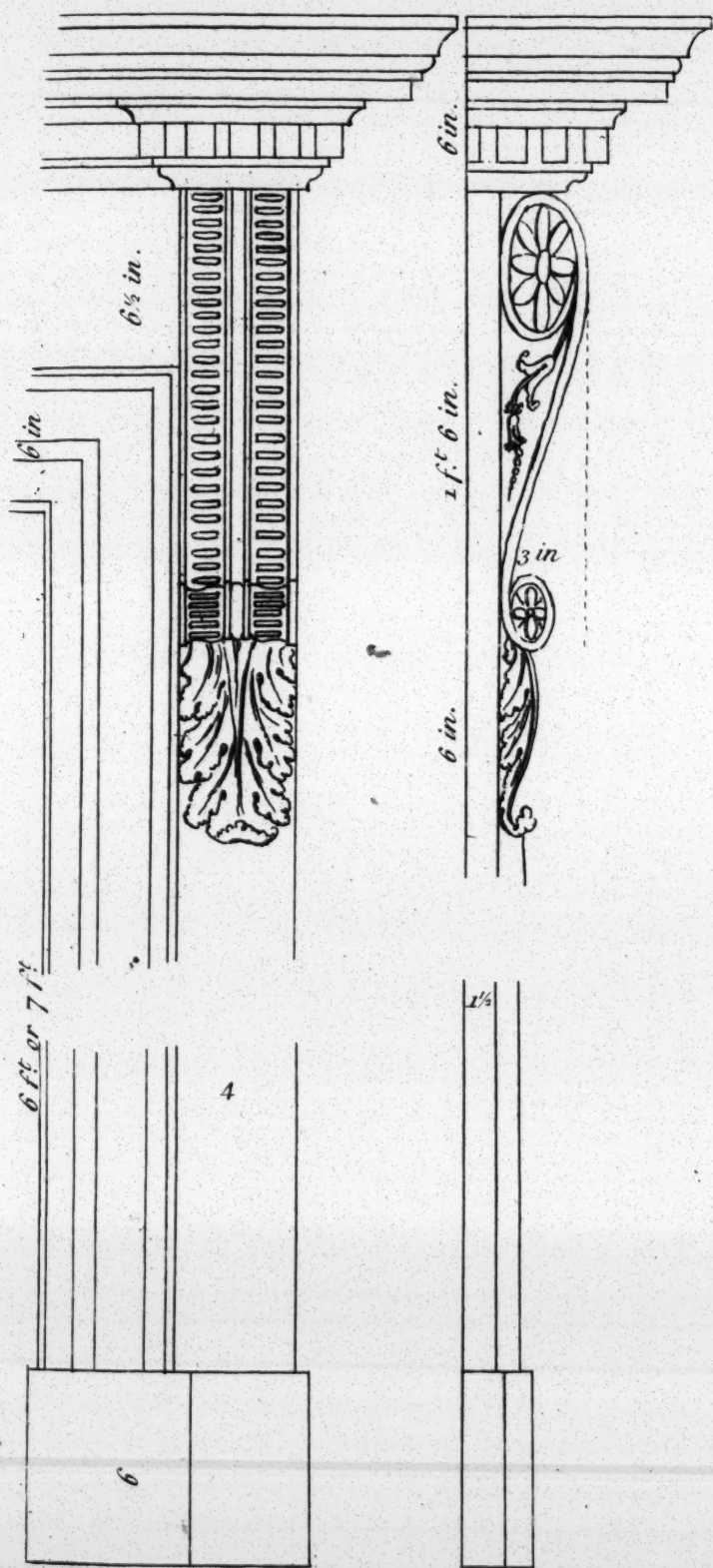
*Entablature for Doors Windows &c.
with all the Measures figured for Practice at large.*



*Guides for the Raking Planes of a Pediment &c.
Divide the Width into 15 parts, give one to a Rib & one to a Space.*

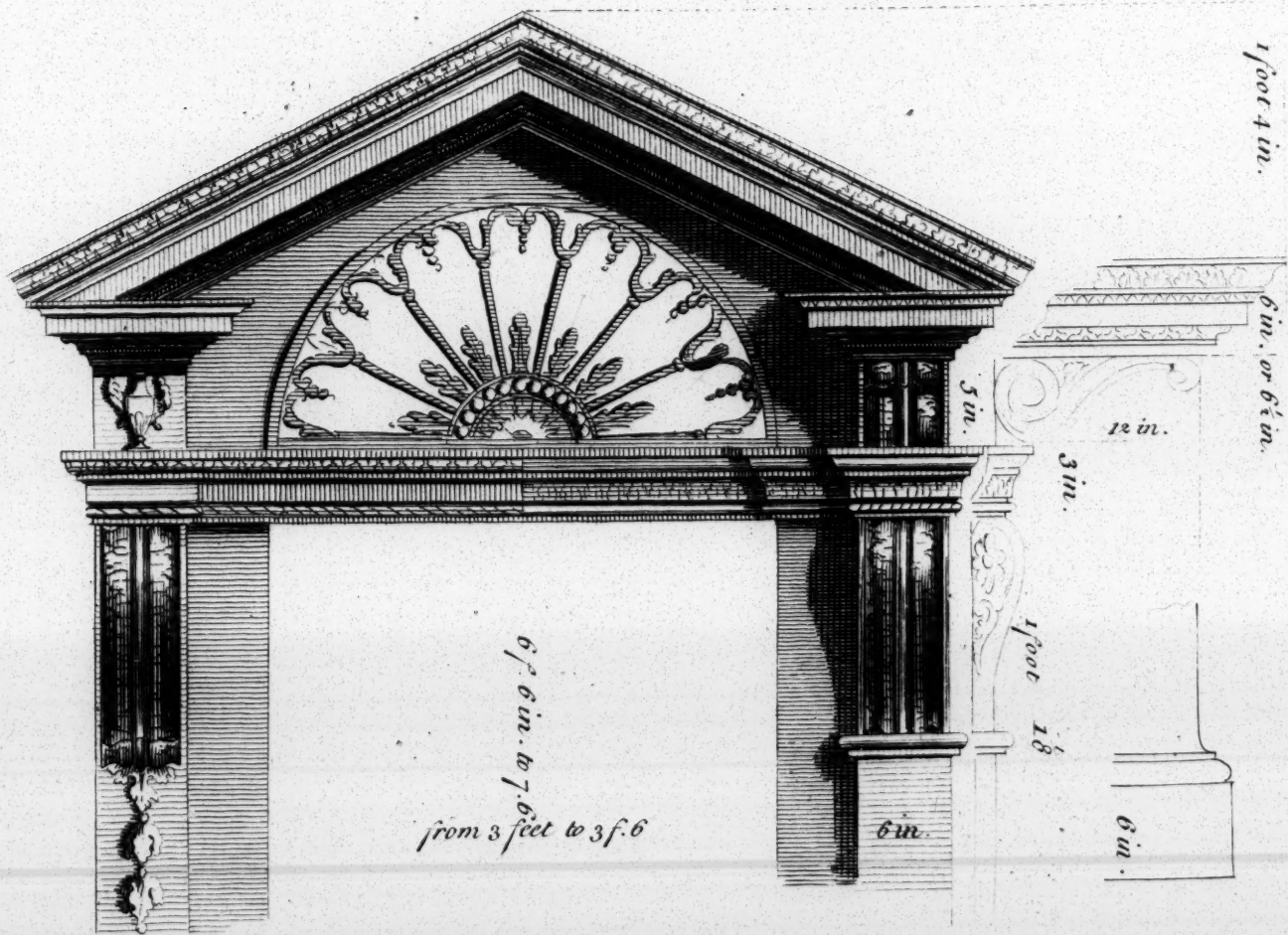
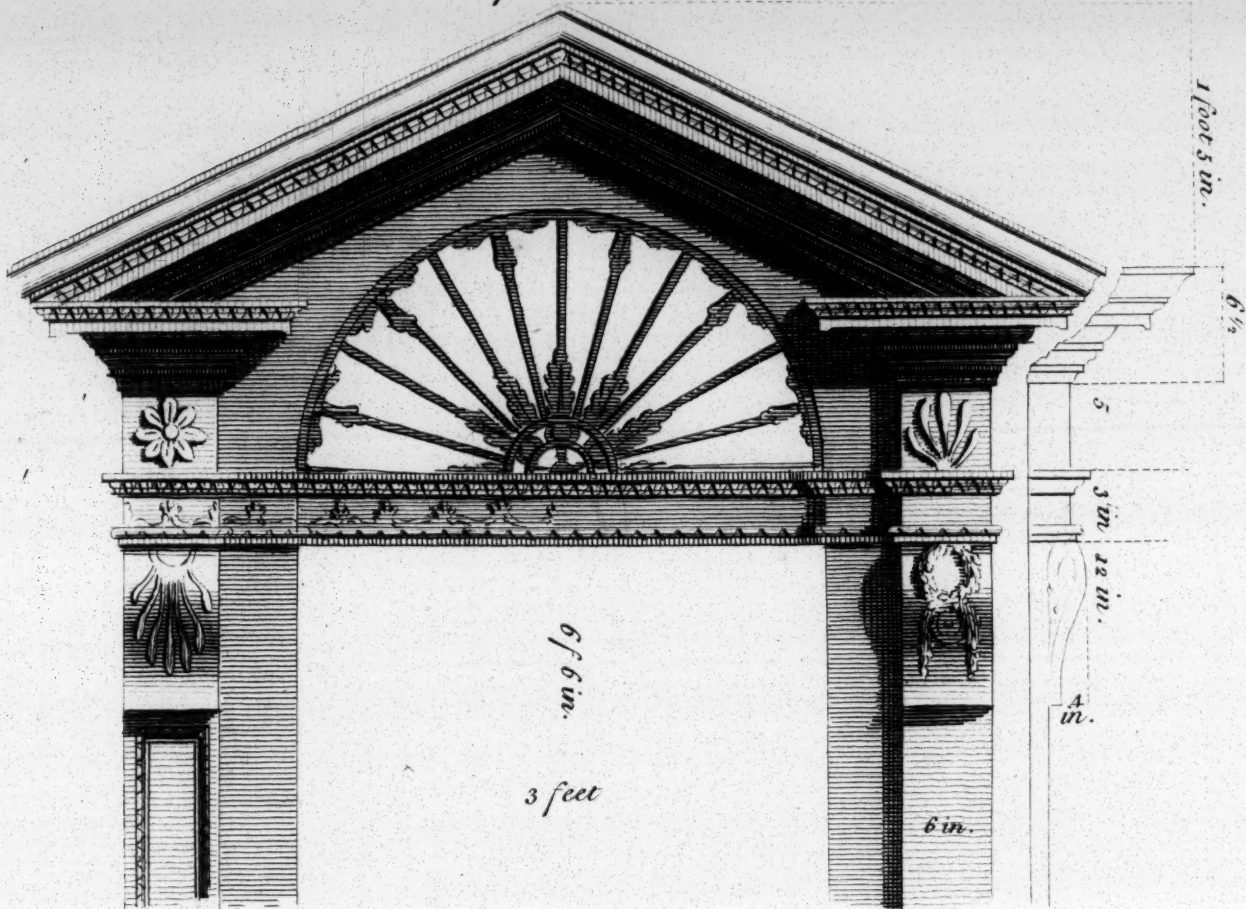


Two Entablatures for Doors,
the Measures figured.

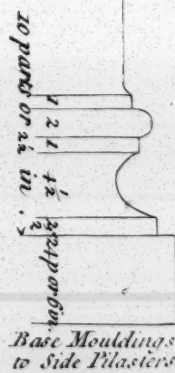
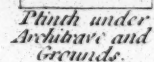


3 ft. 2. or 3 ft. 1 in.



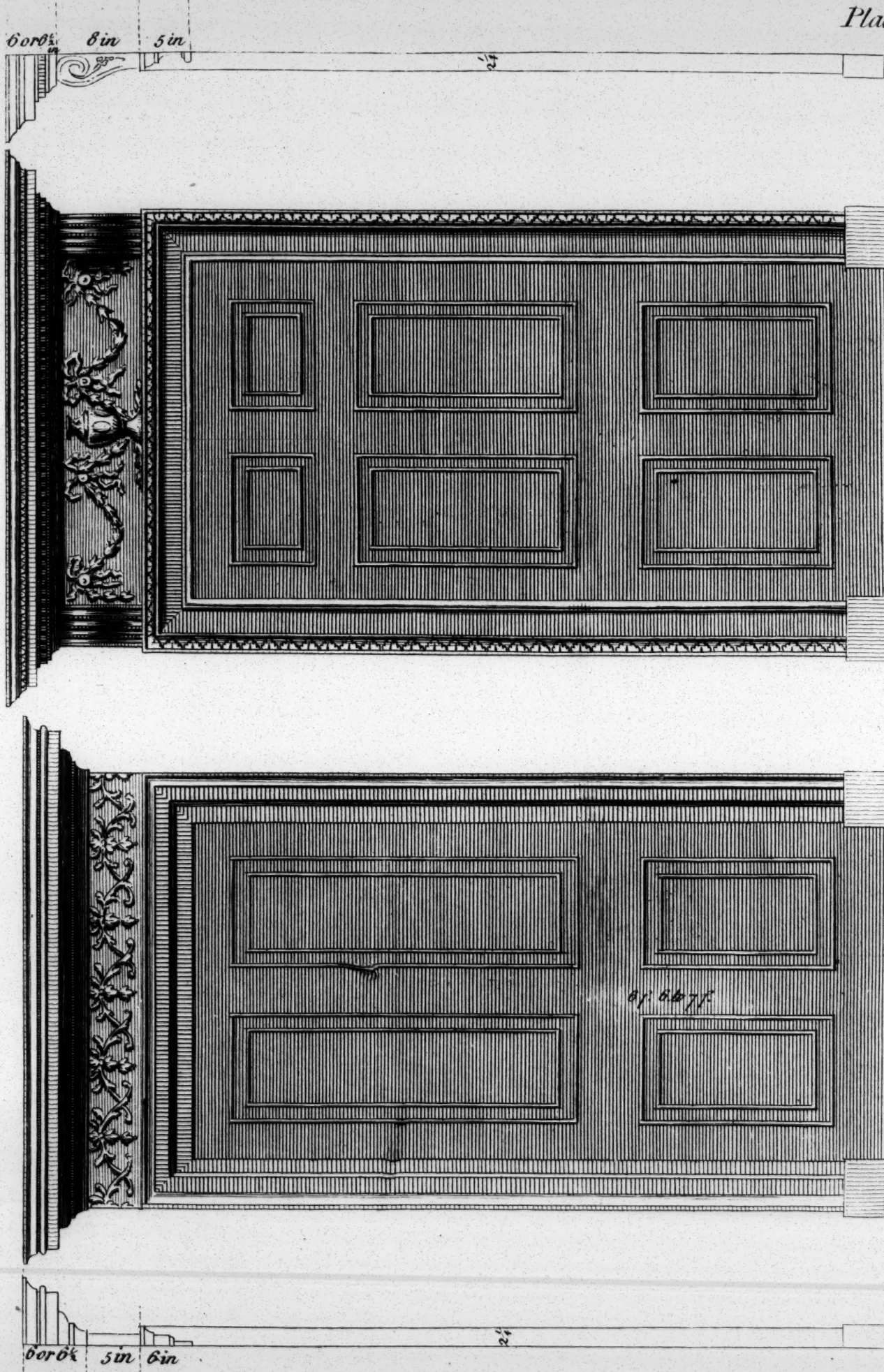




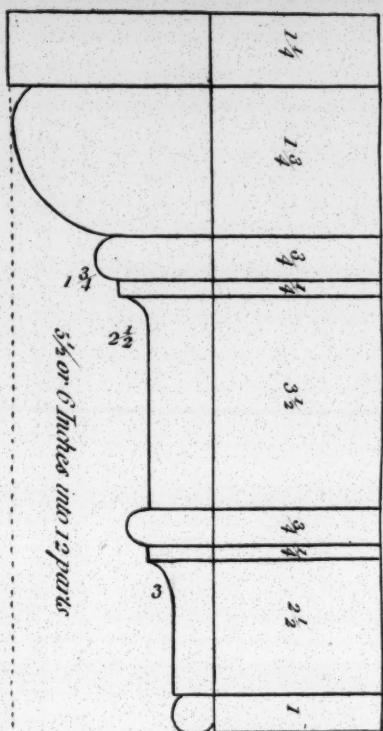
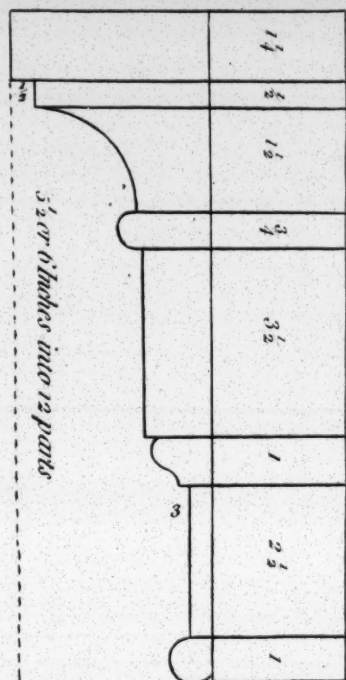




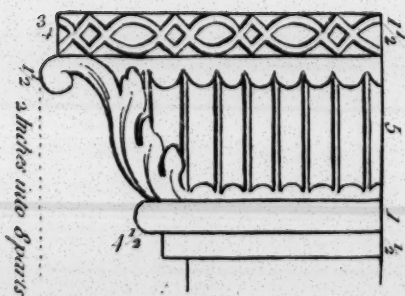
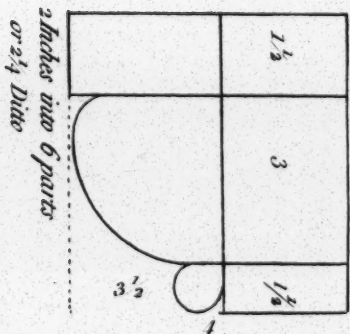
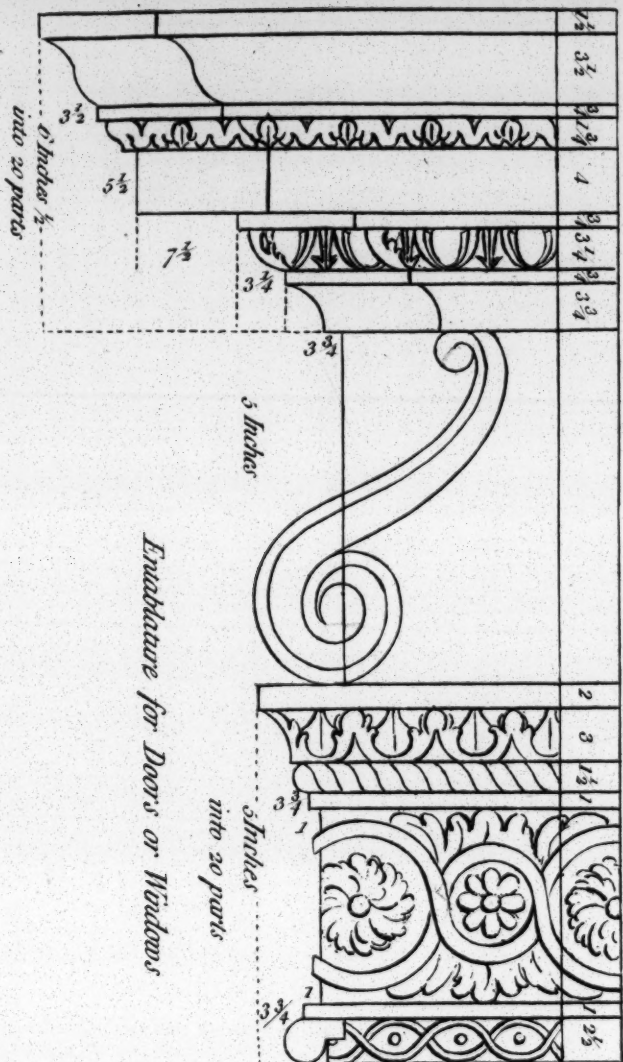
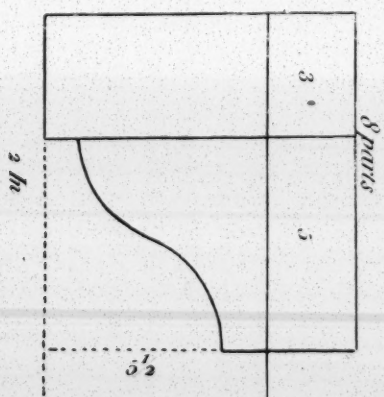
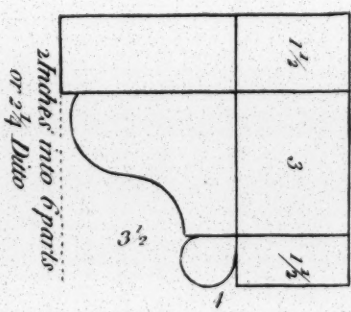
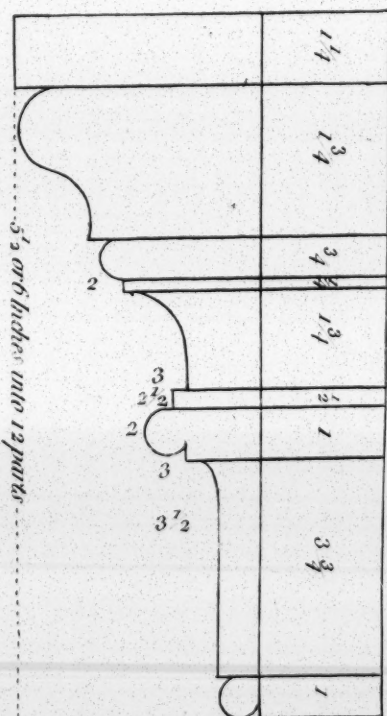
Door Cases for Rooms.







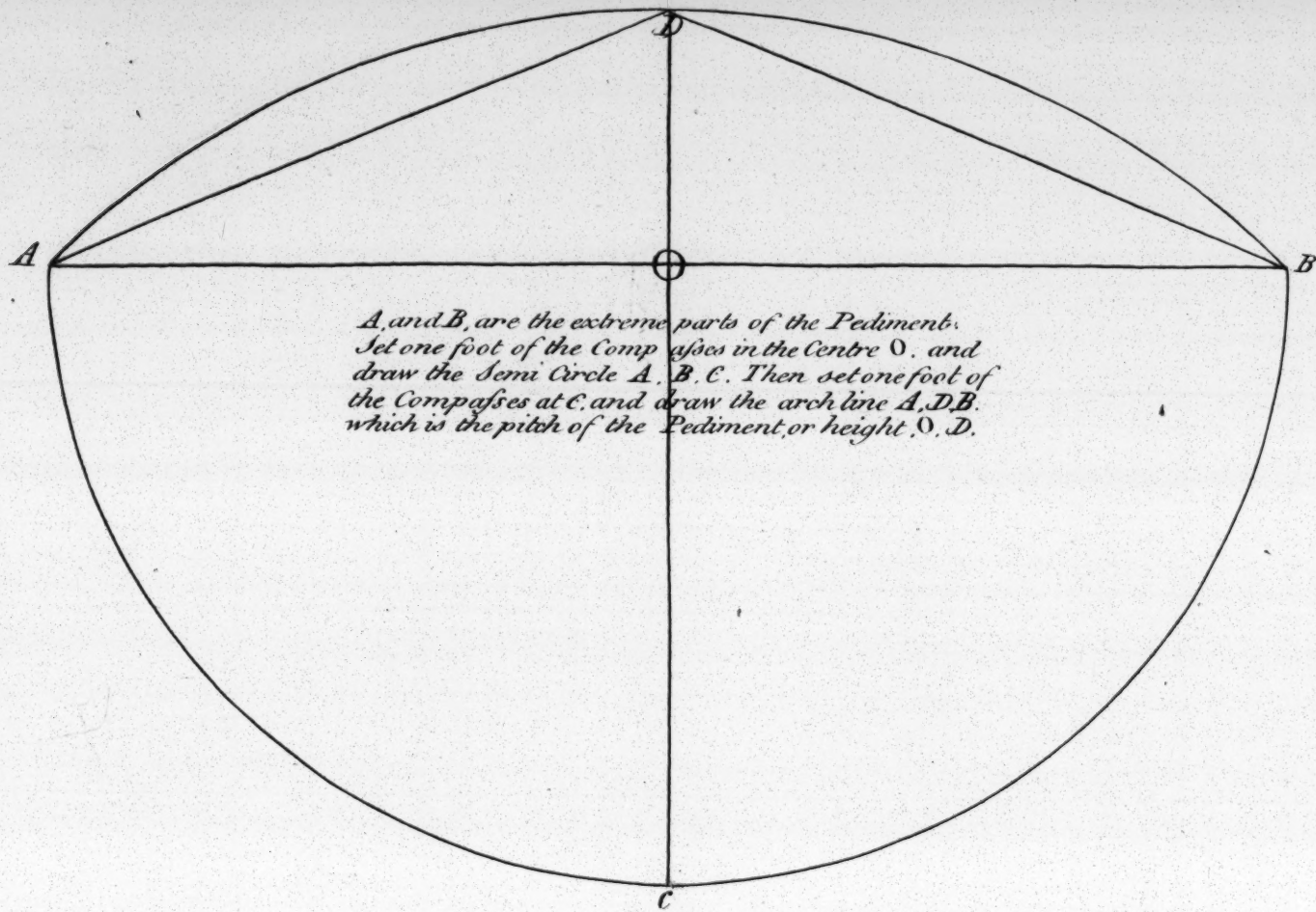
*Architrave Mouldings
for Doors, Windows &c.*



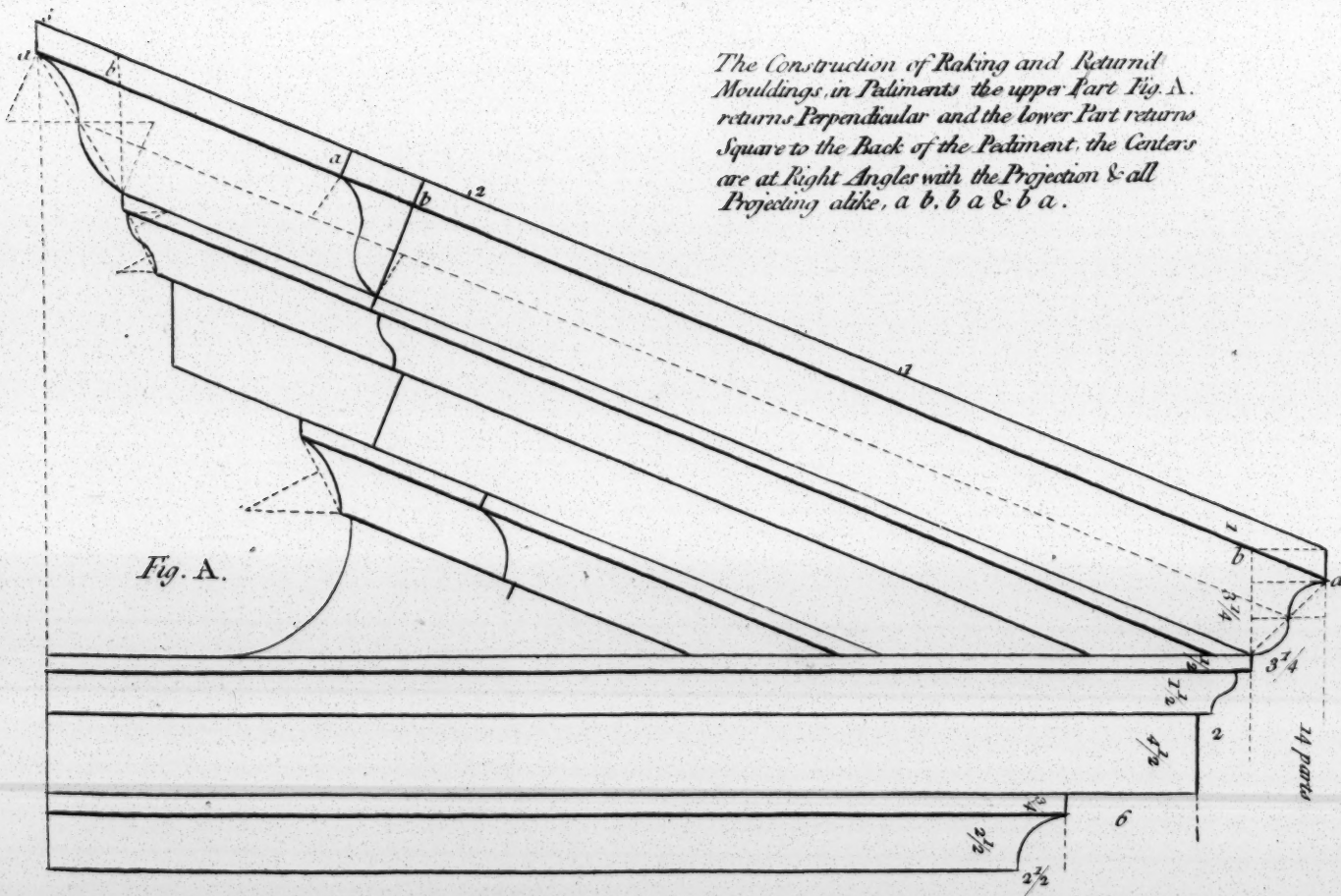


Pediment Pitch.

Plate XXXVIII



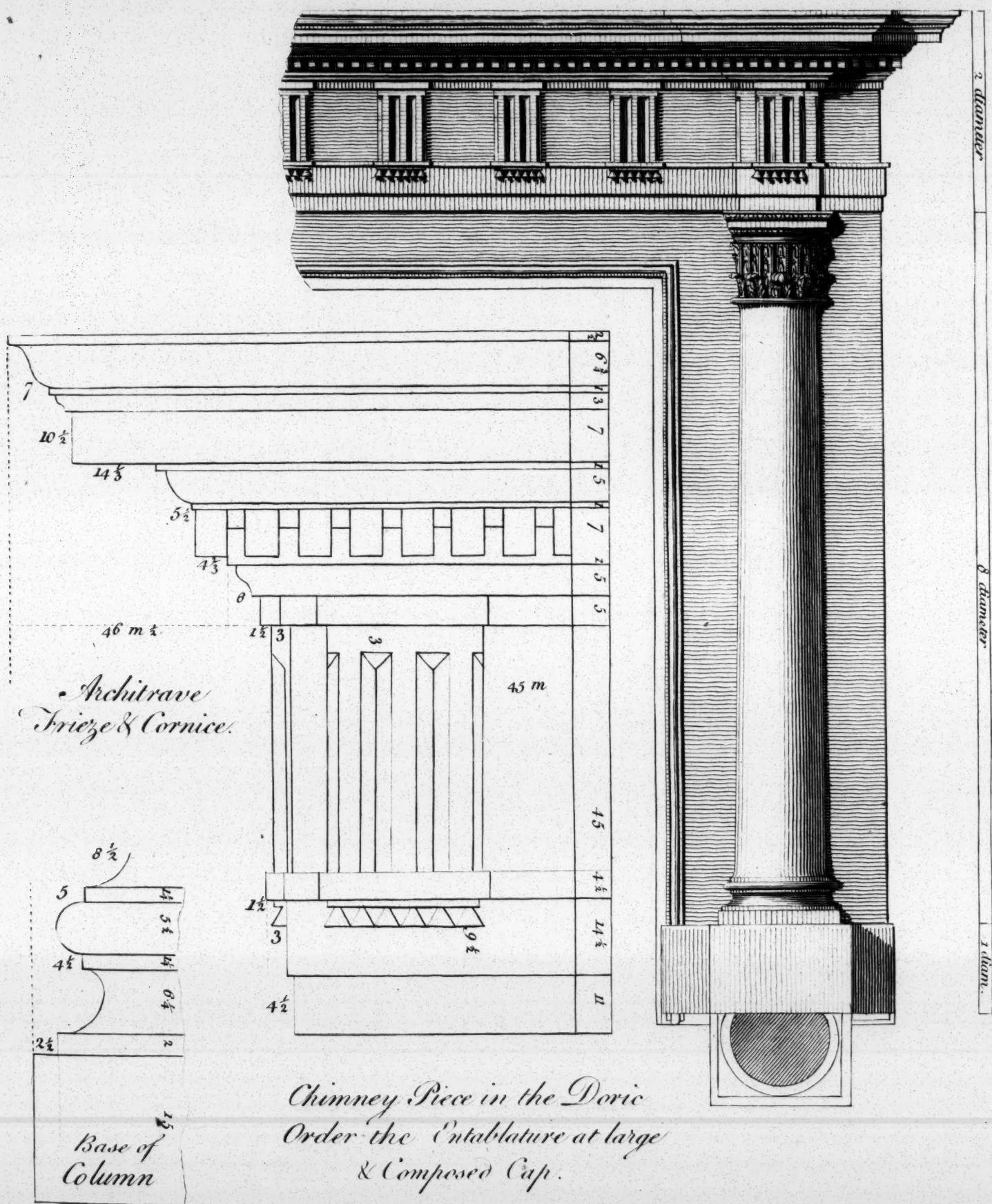
*A, and B, are the extreme parts of the Pediment.
Set one foot of the Compasses in the Centre O, and
draw the Semi Circle A. B. C. Then set one foot of
the Compasses at C, and draw the arch line A. D. B.
which is the pitch of the Pediment, or height O. D.*



*The Construction of Raking and Return
Mouldings, in Pediments the upper Part Fig. A.
returns Perpendicular and the lower Part returns
Square to the Back of the Pediment, the Centers
are at Right Angles with the Projection & all
Projecting alike, a b, b a & b a.*

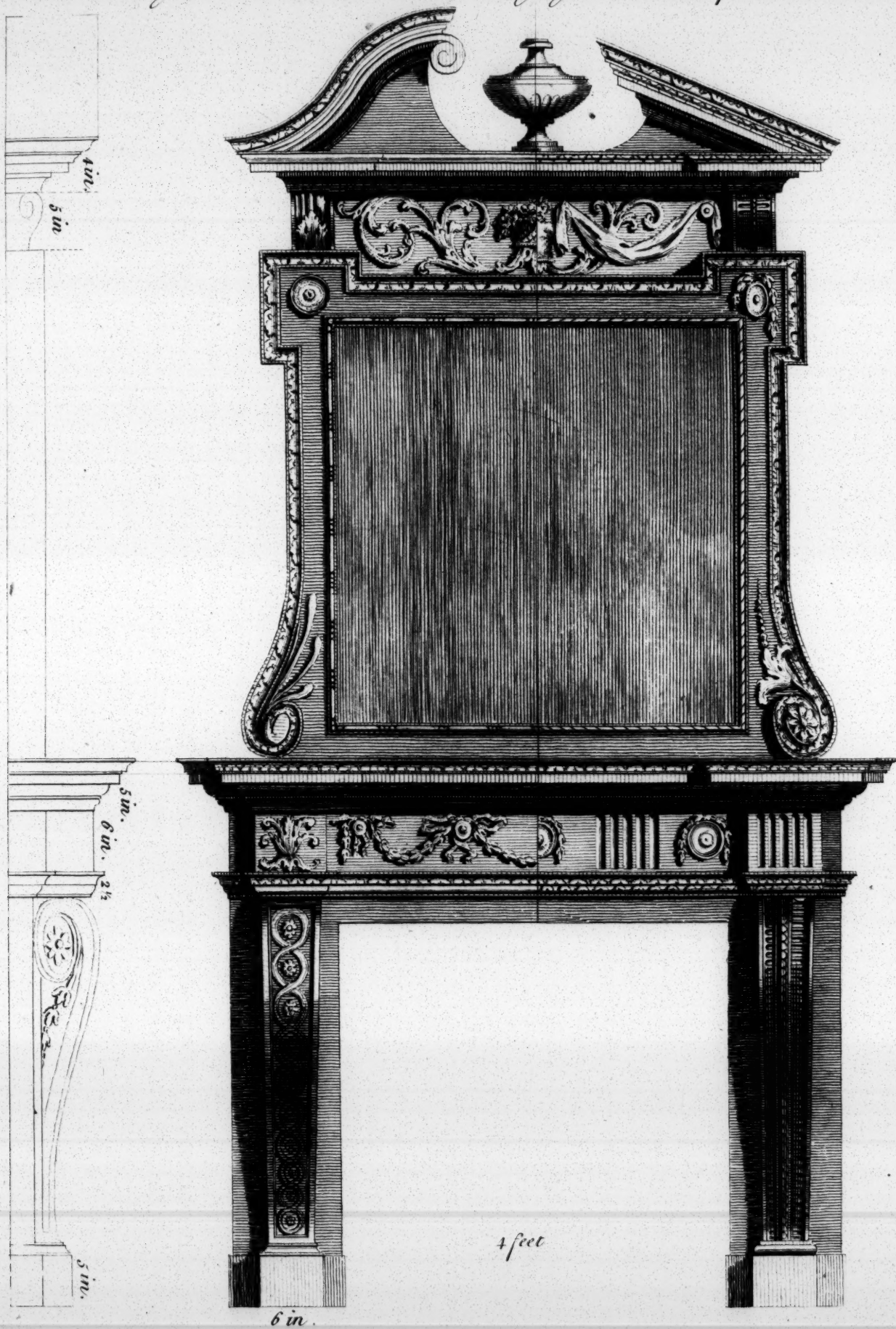
Fig. A.





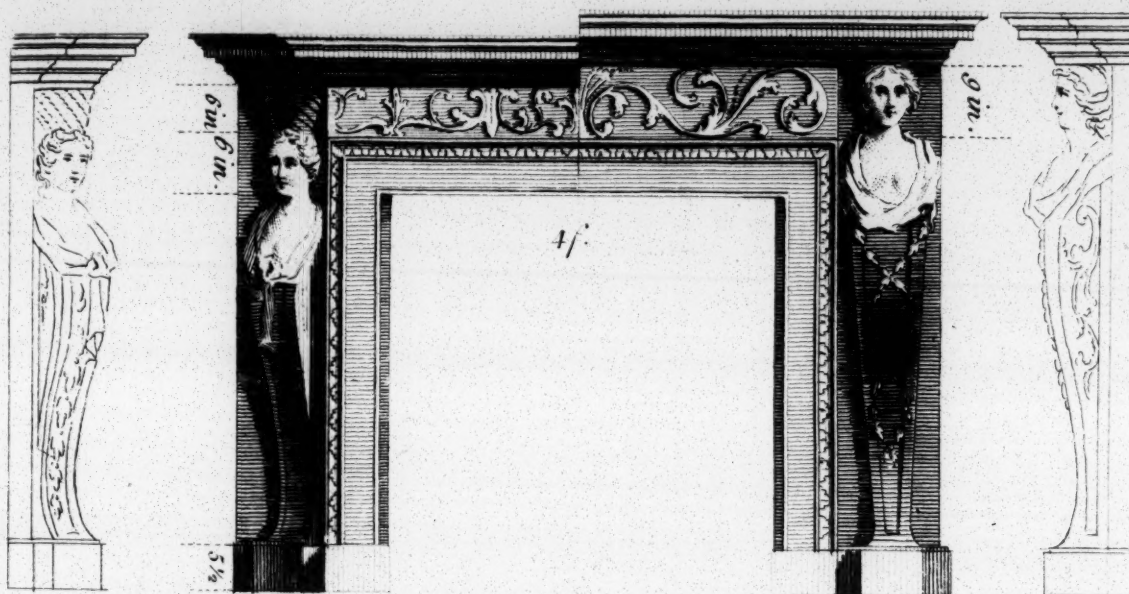


Two Chimney Pieces with open Pediment, Glass or Picture frames ornamented. Plat. XL.

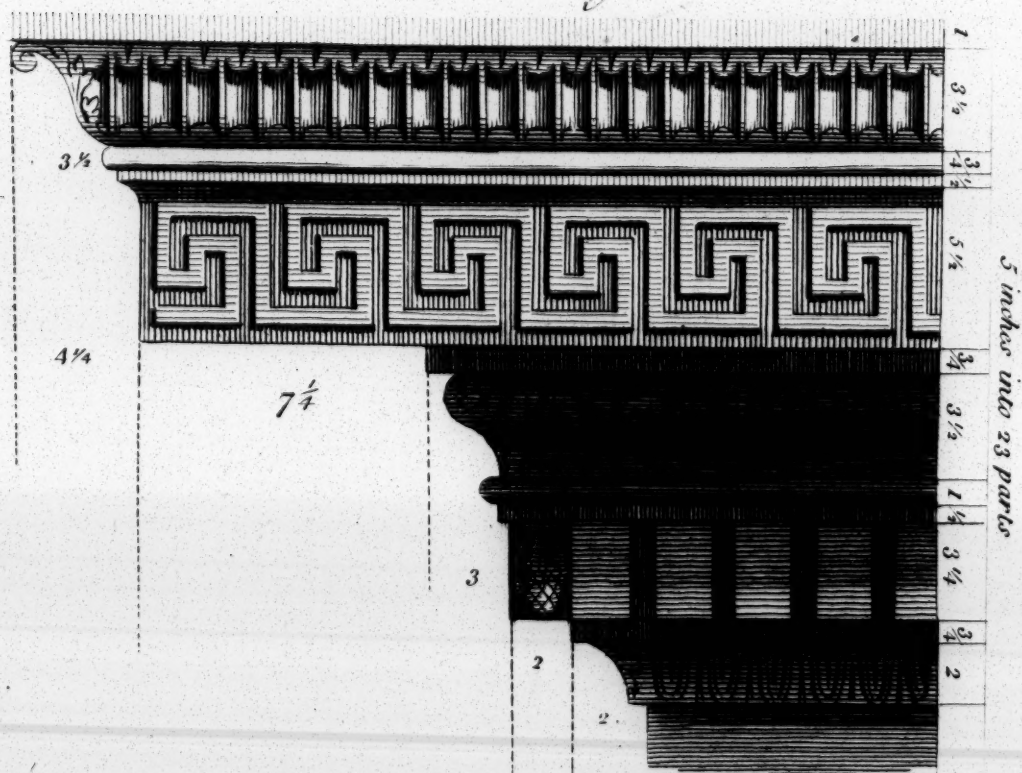




Two Designs for Chimneys with Caryattic Figures.

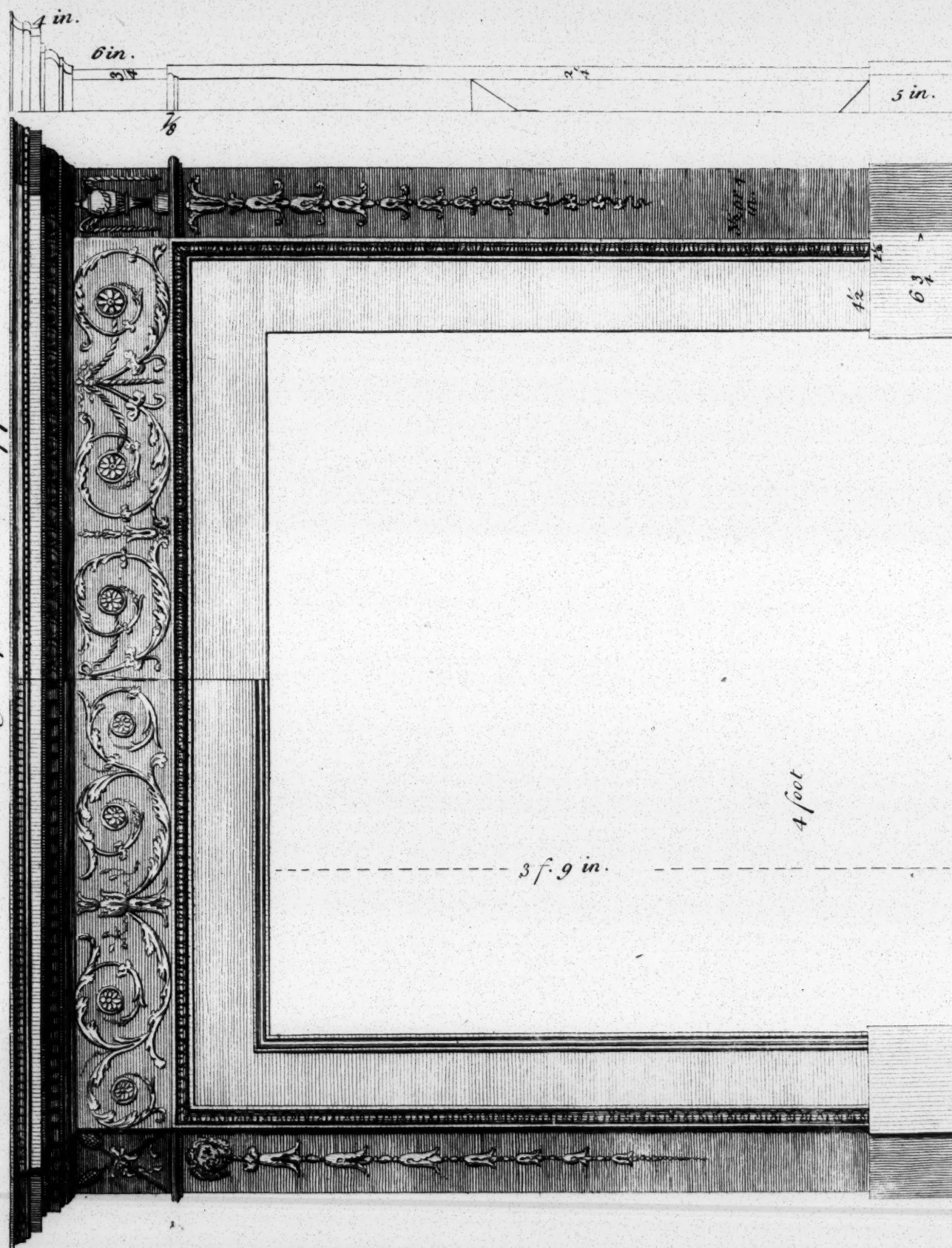


Cornice at large.



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1900

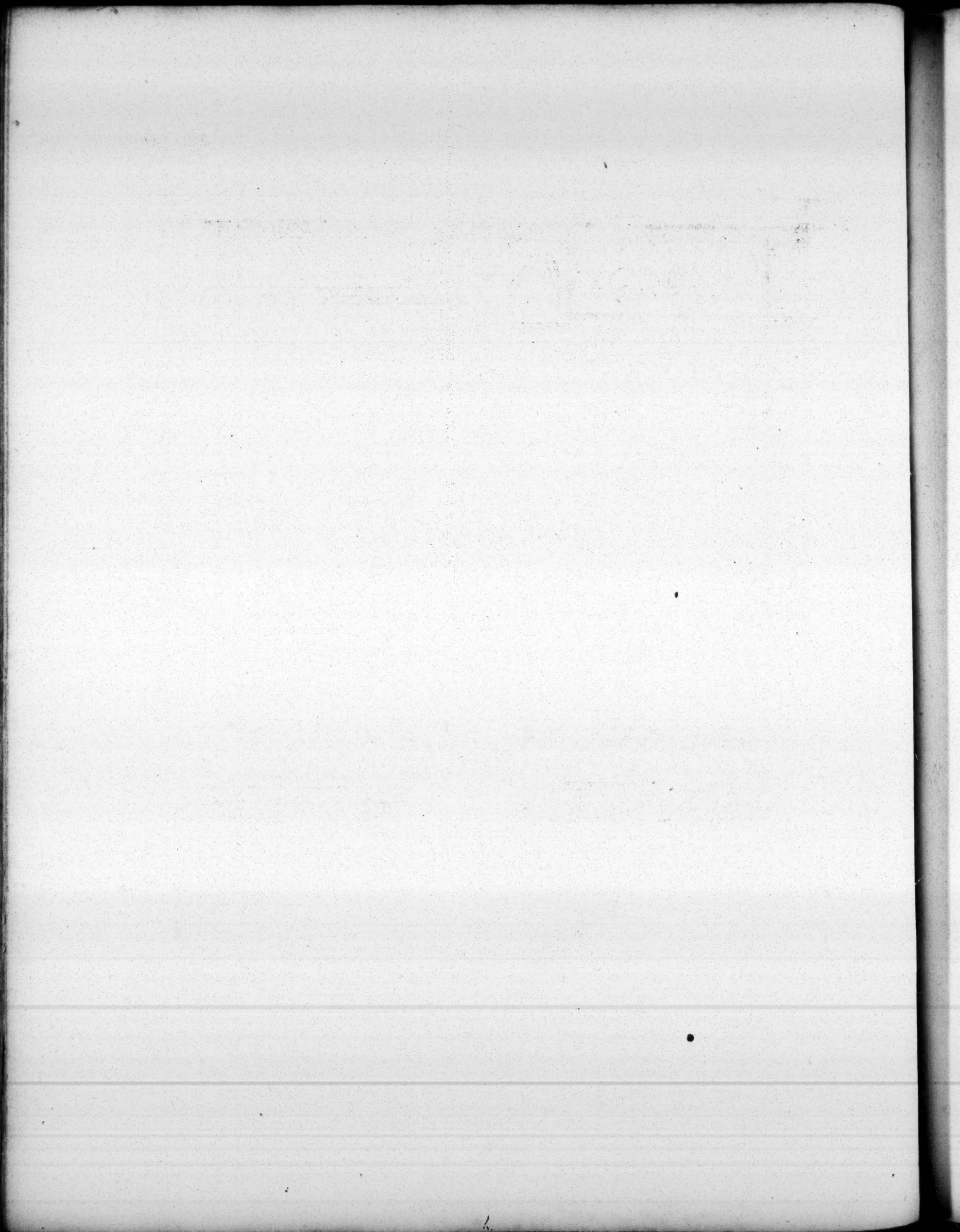
Two Designs for Chimney pieces.



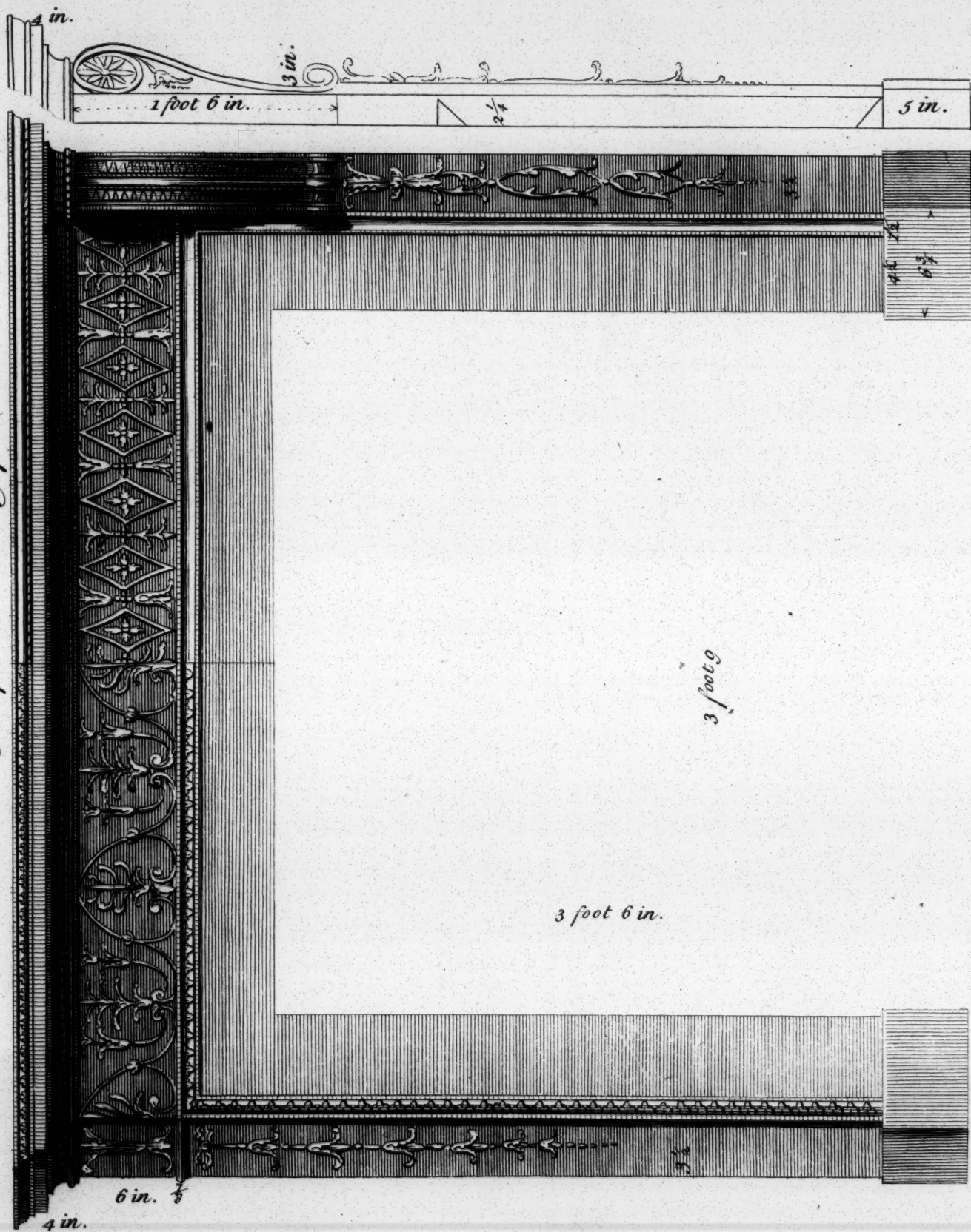


Two Designs for Chimneys.
with their Mouldings at large.

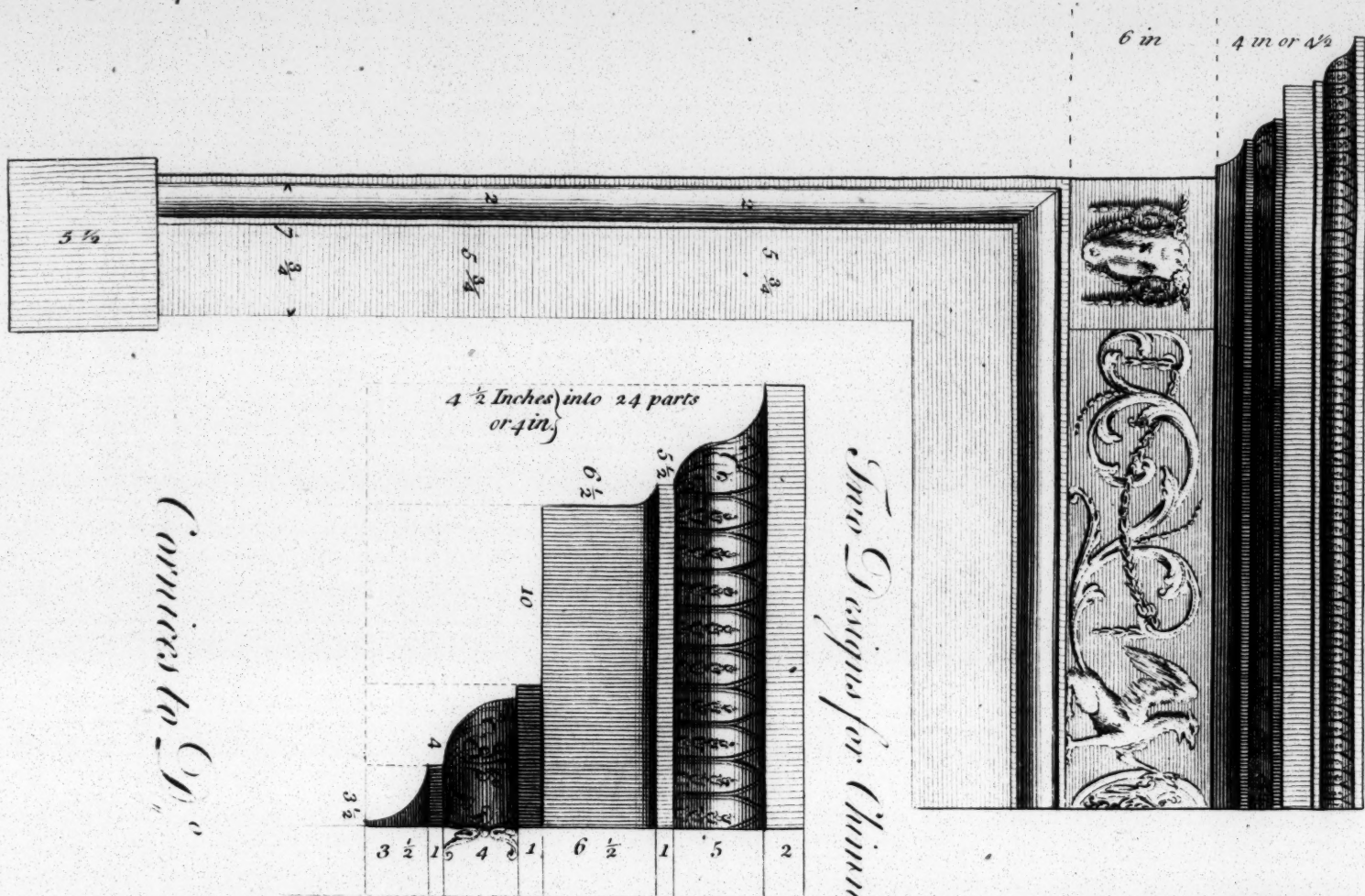
4 in. 7 2 1
4 in. 4 1/2 2 5 3/4
4 1/2 x 1 1/2 in.
4 in x 6 in.



Two Designs for Chimney-pieces.

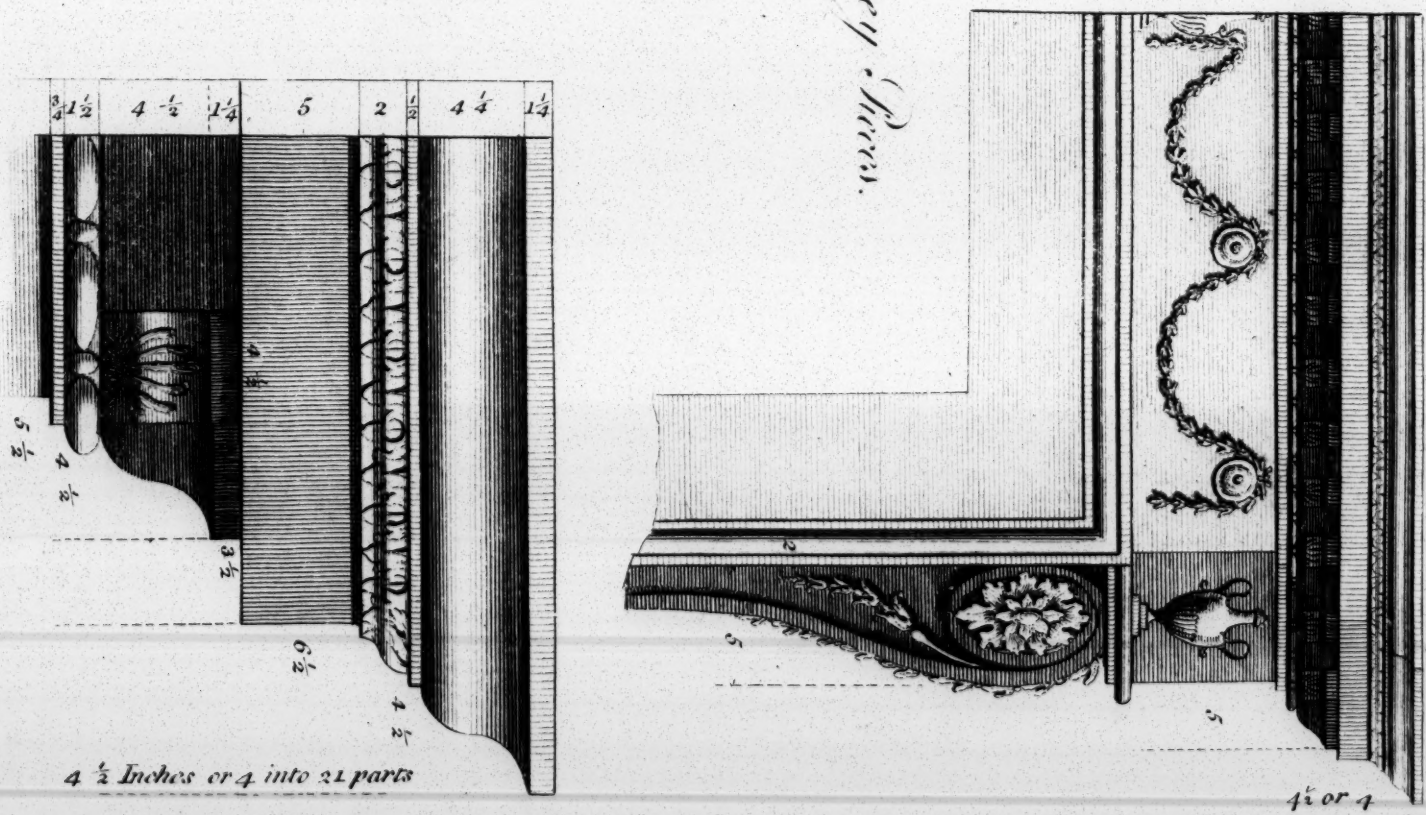




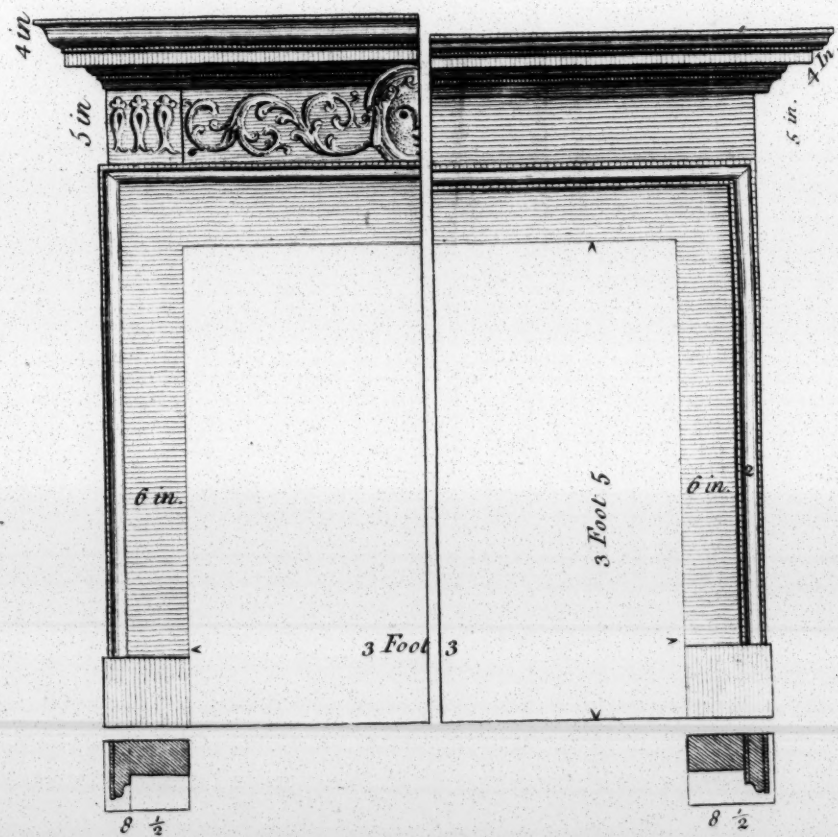
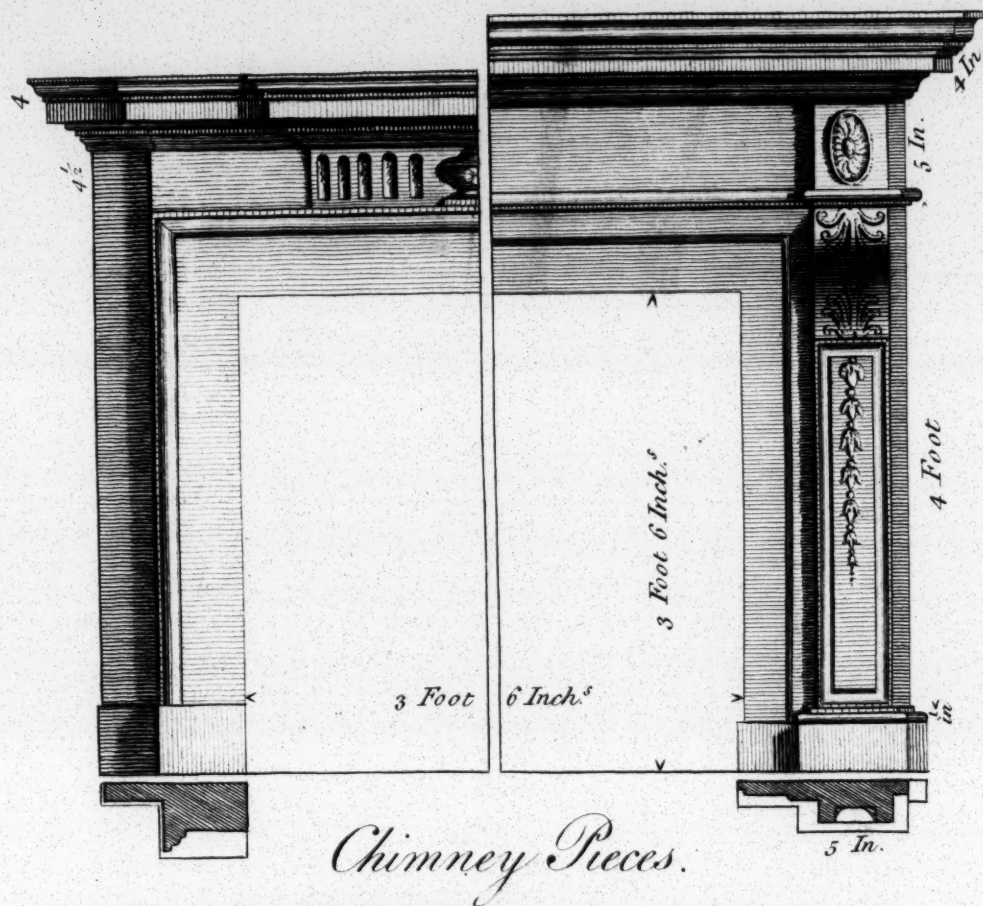


Two Designs for Chimney Cornice.

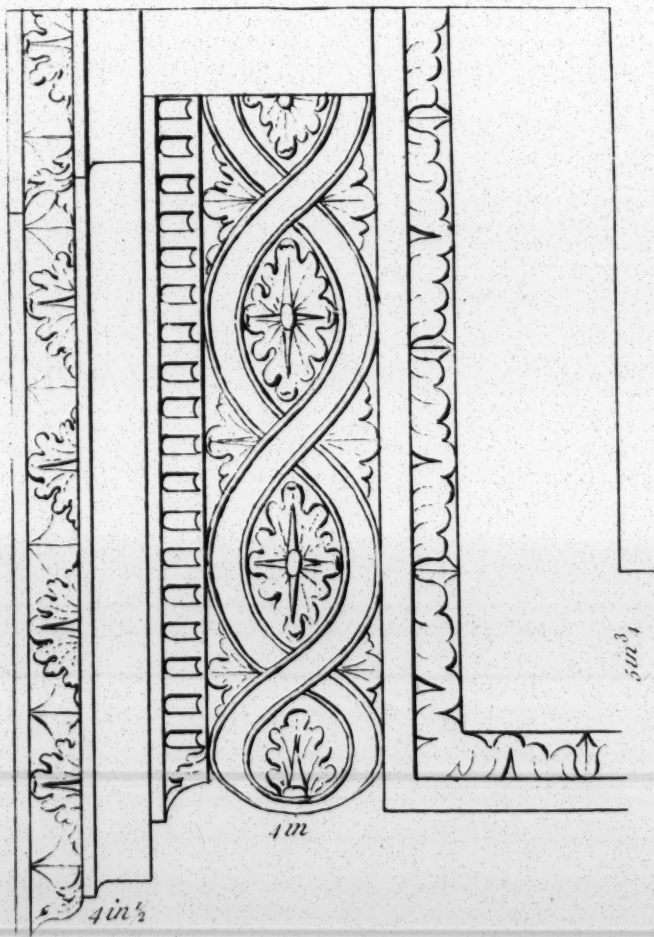
Cornice to 'C'.



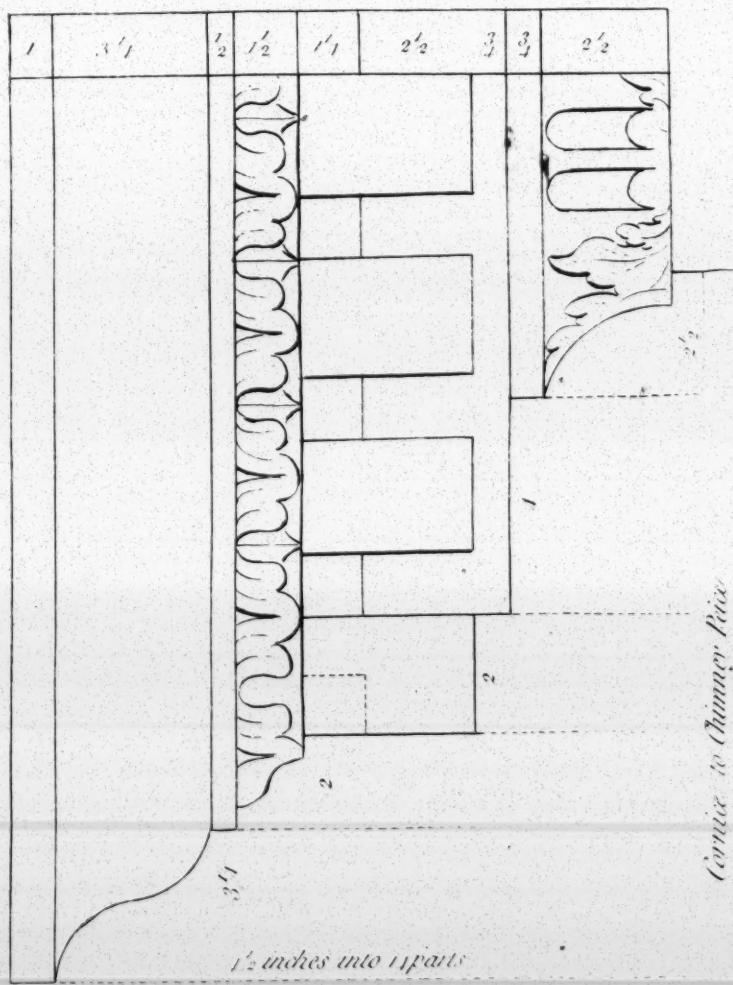




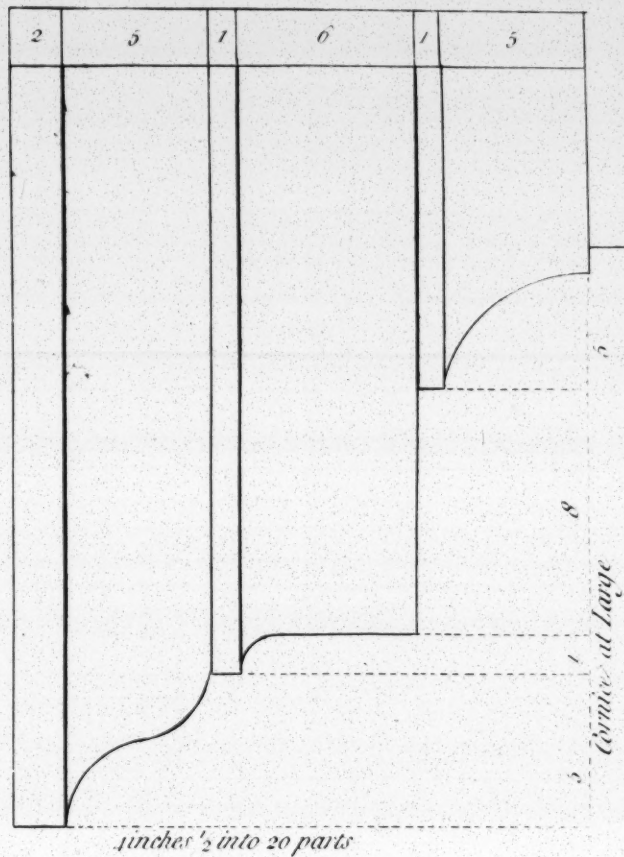
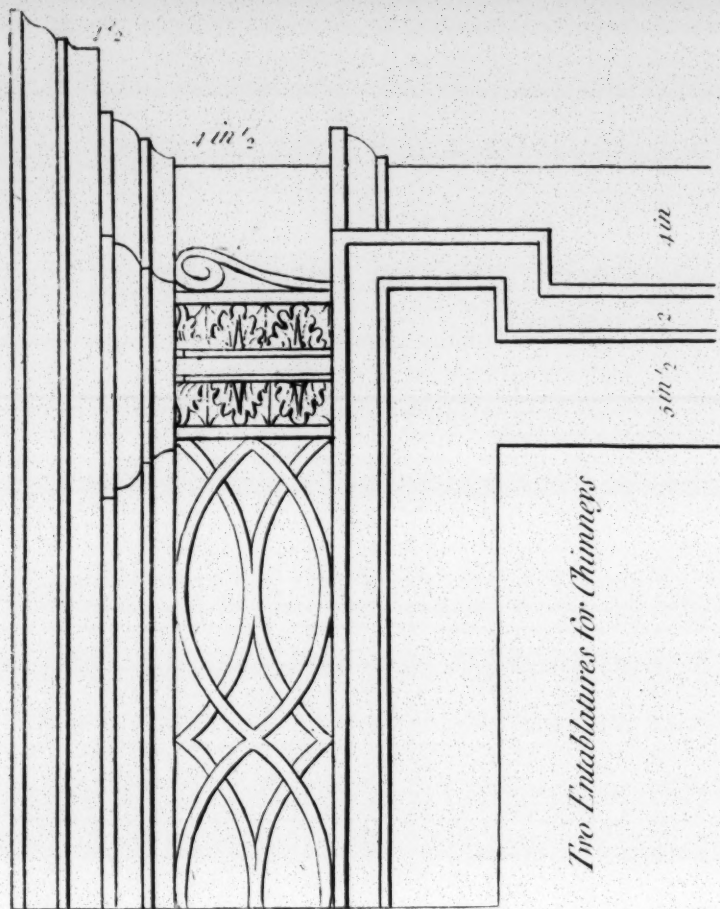




The Entablatures for Chimneys

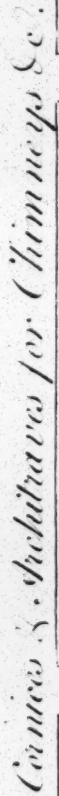


Cornice to Chimney Piece

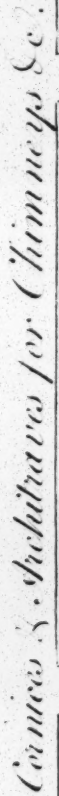


Cornice at Large

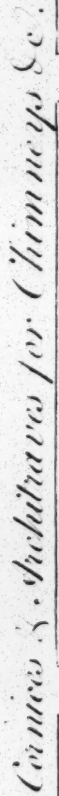




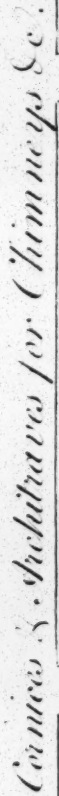
1½ inches into 28 parts



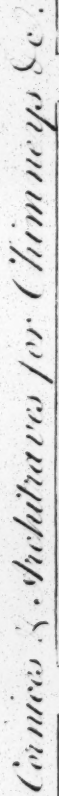
1½ inches into 28 parts



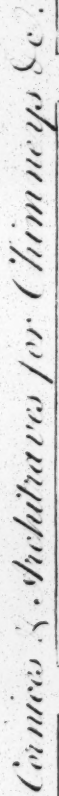
4 or $4\frac{1}{2}$ inches into 22 parts



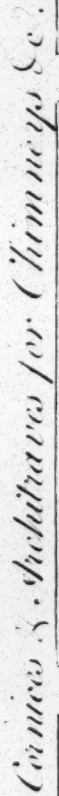
4½ inches into 21 parts or 4 in



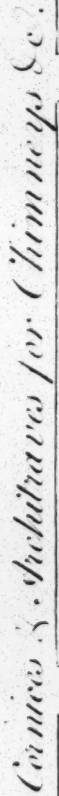
4 or $4\frac{1}{2}$ in. into 36 parts



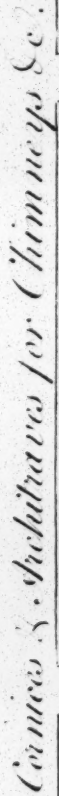
2 $\frac{1}{2}$ inches into 10 parts



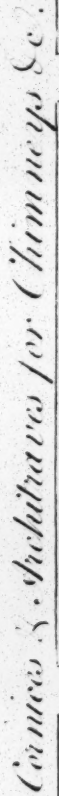
2 inches into 6 parts



these Mouldings from
1½ inch. to 2 inch.



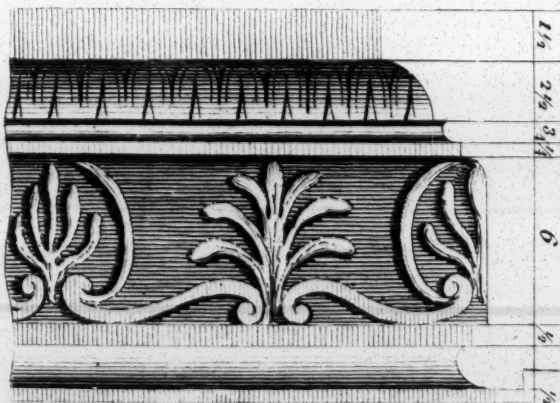
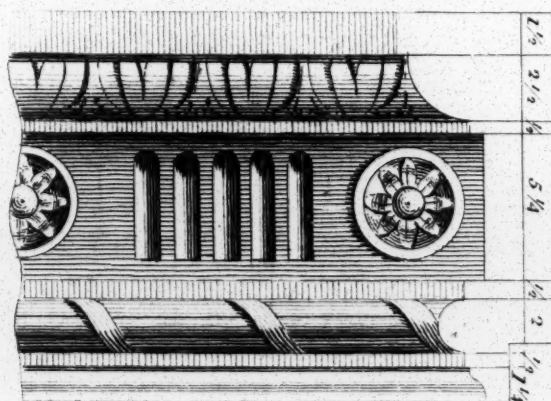
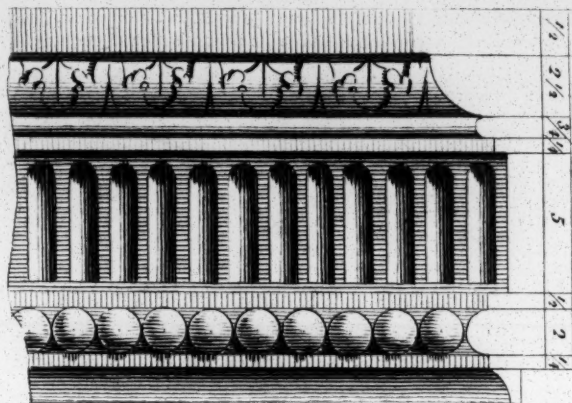
2 inches into 6 parts



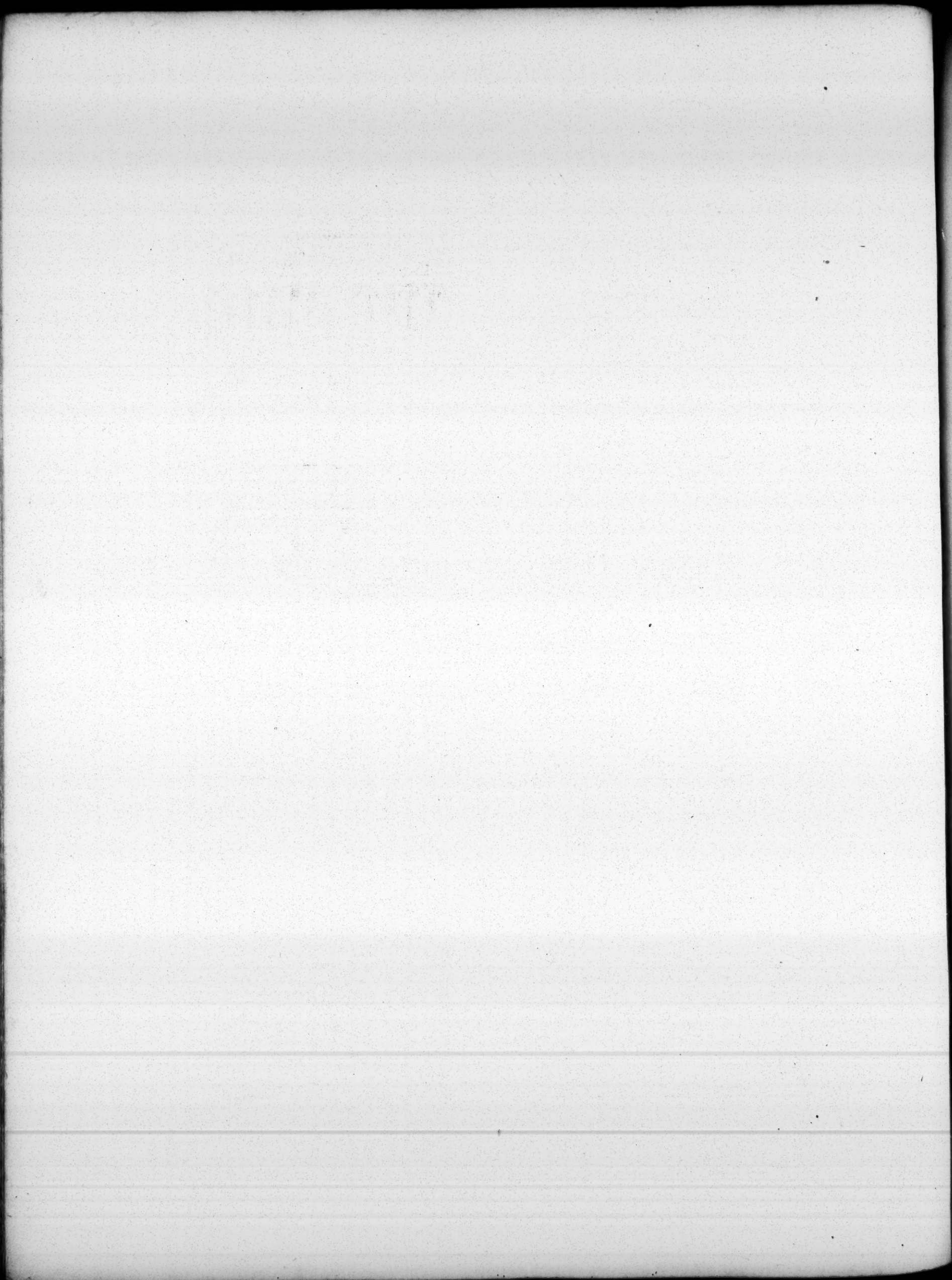
2 inches into 6 parts

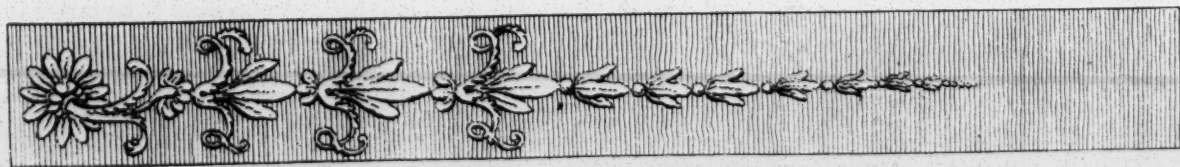
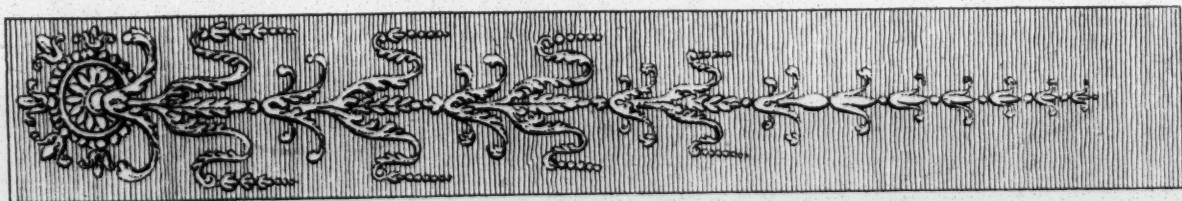
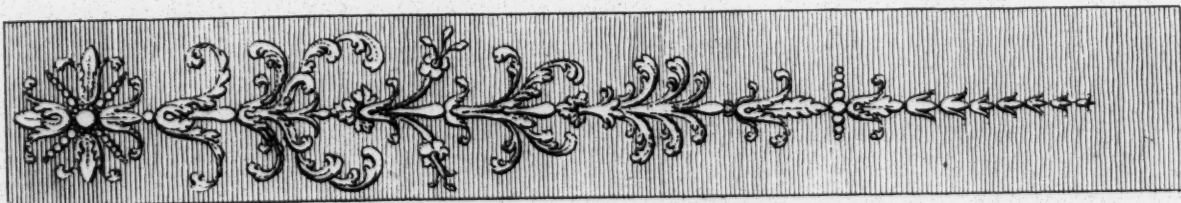
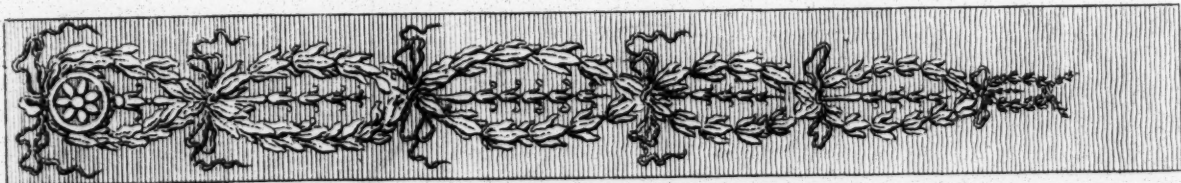
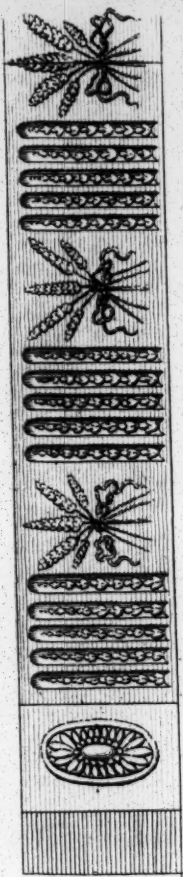


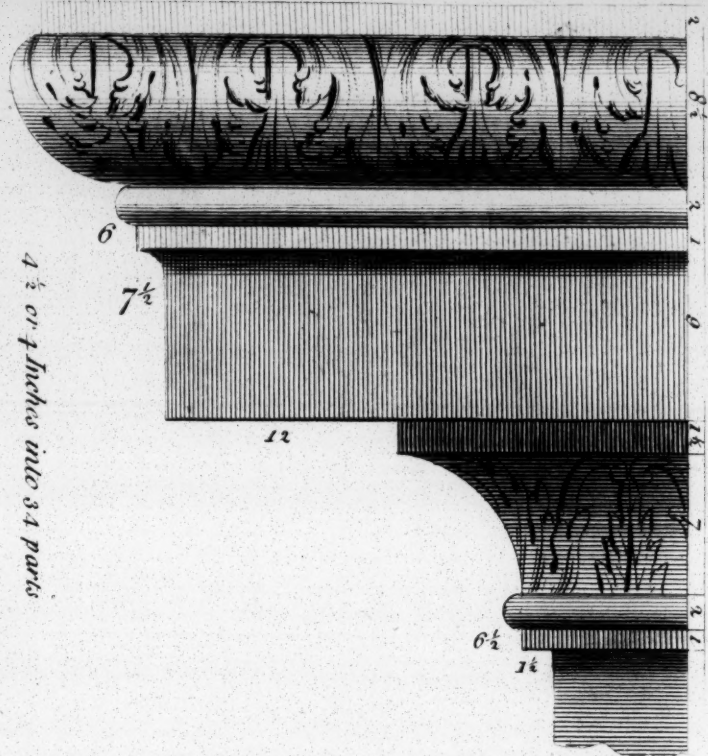
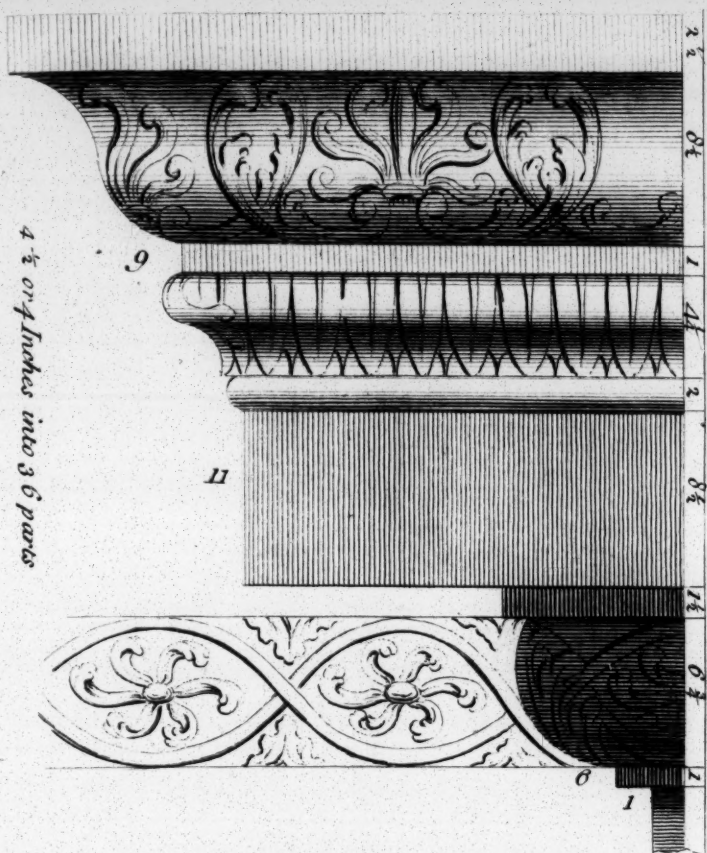
Mouldings for Looking Glass or Picture Frames.



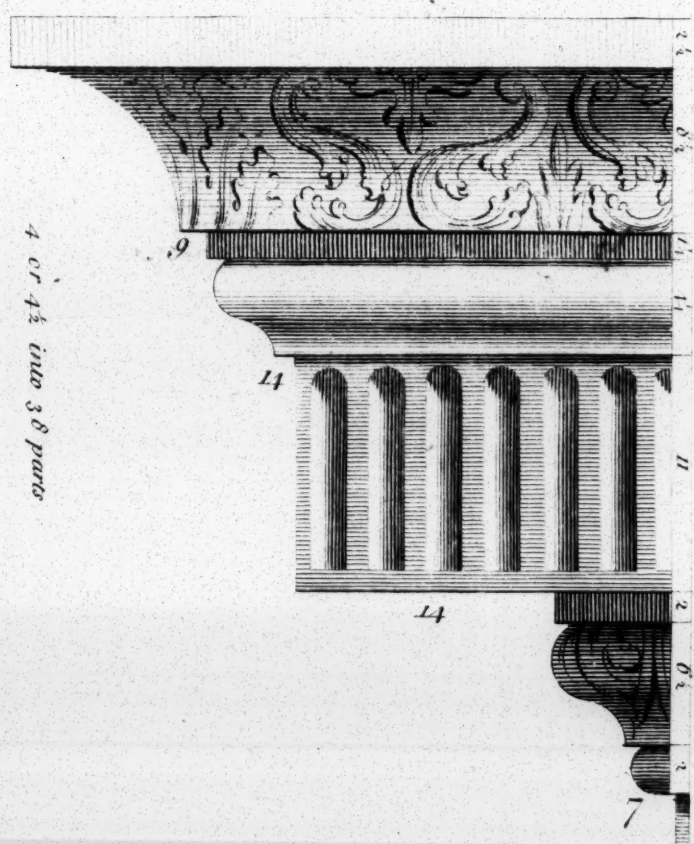
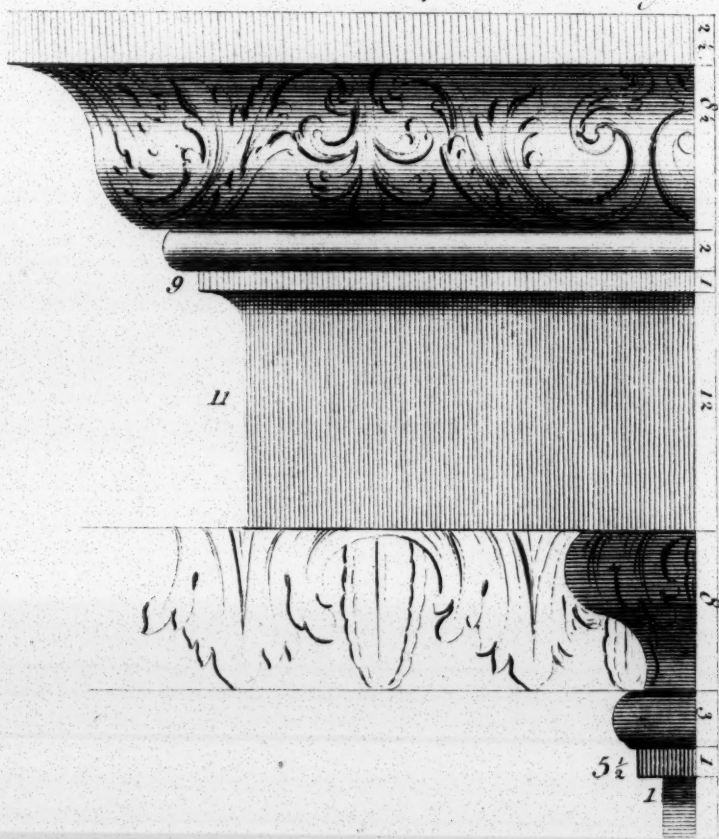
Each frame into 11 Parts.



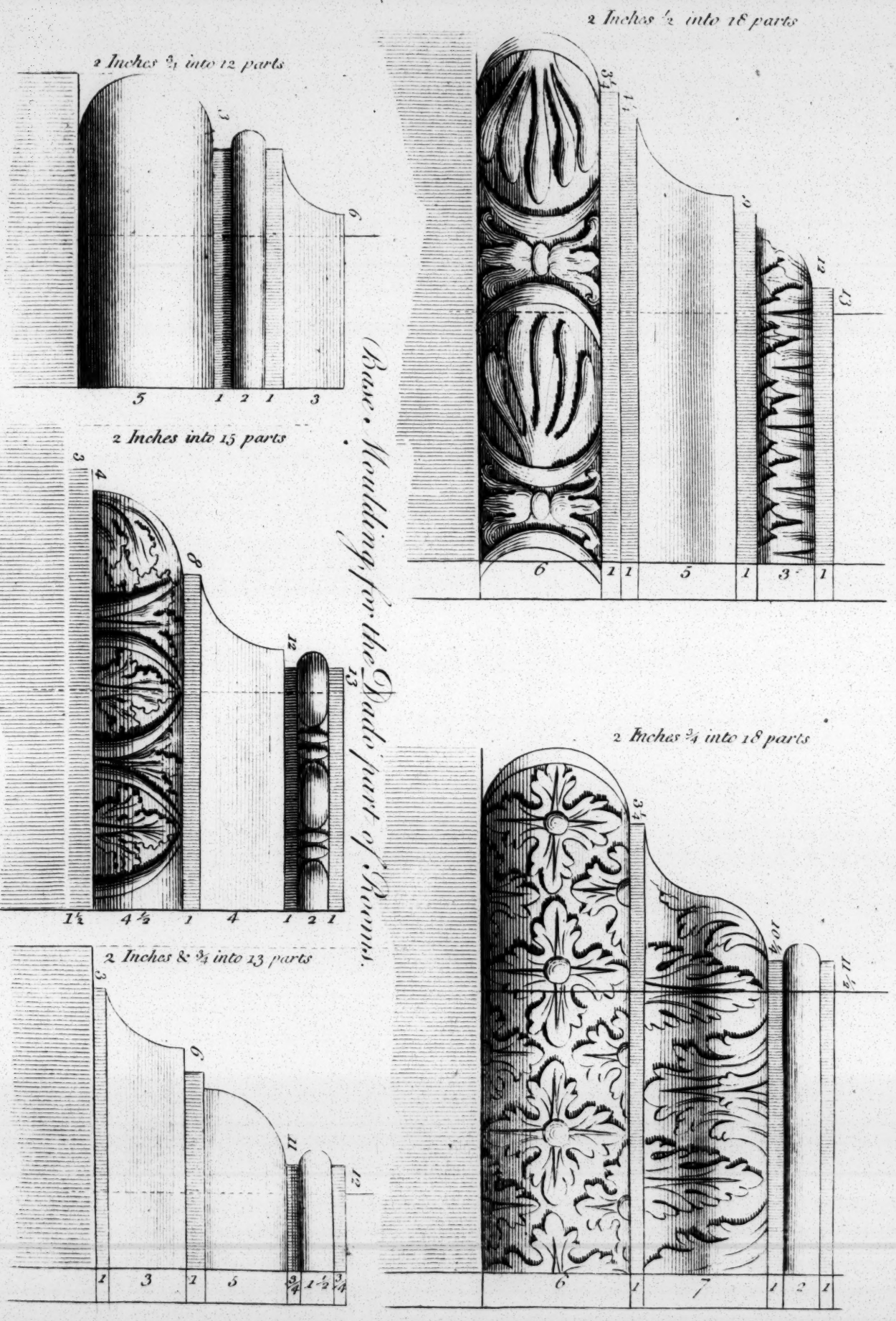




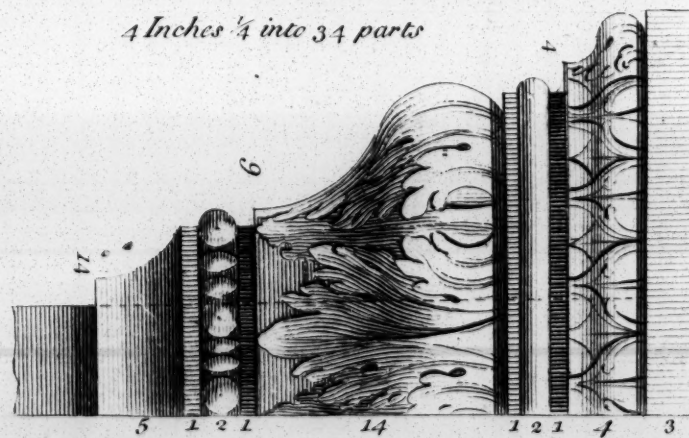
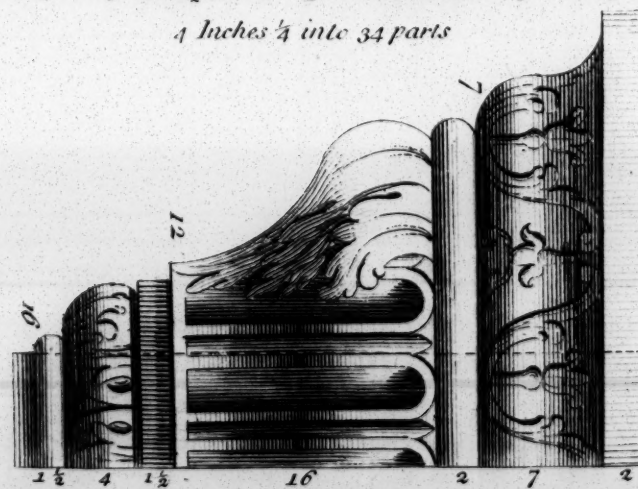
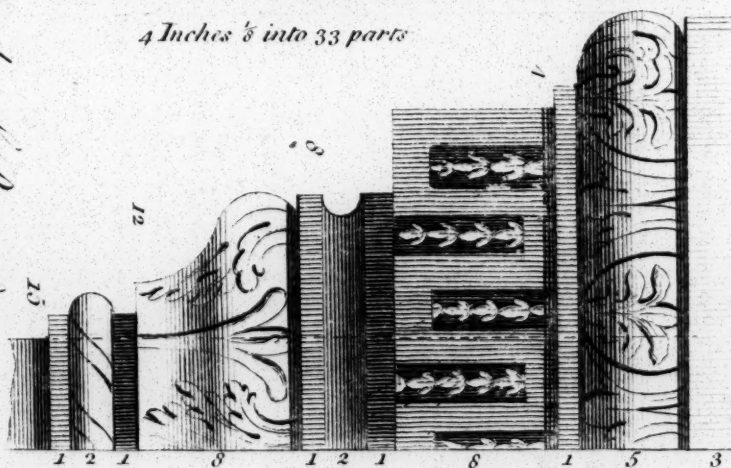
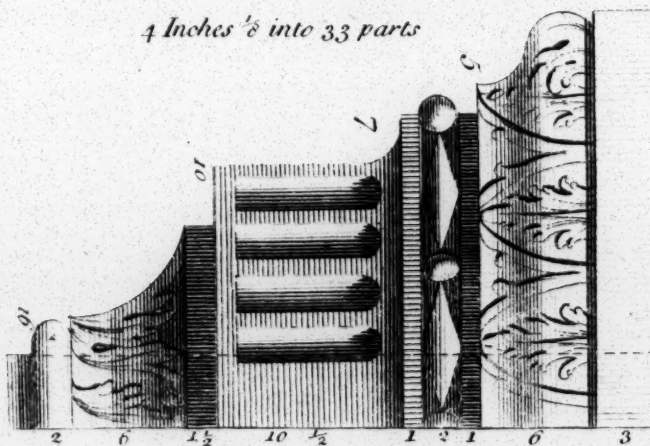
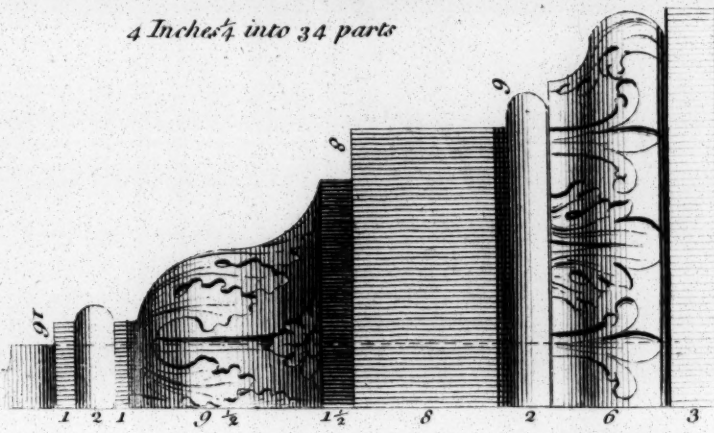
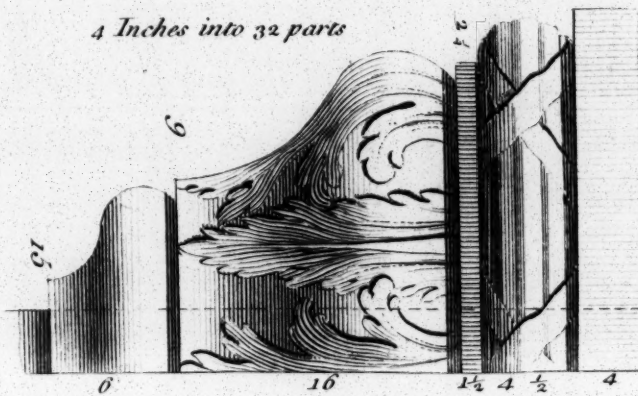
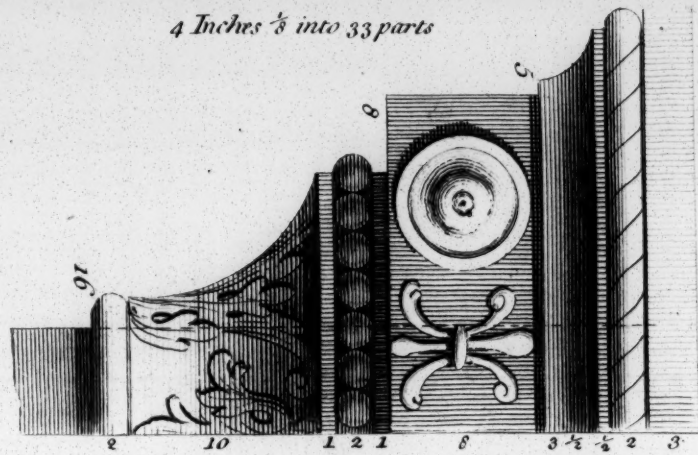
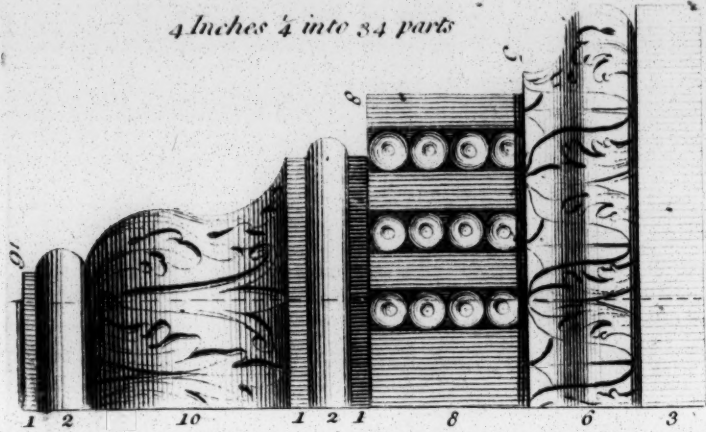
Cornices for Chimney Caps Doors or Windows &c.







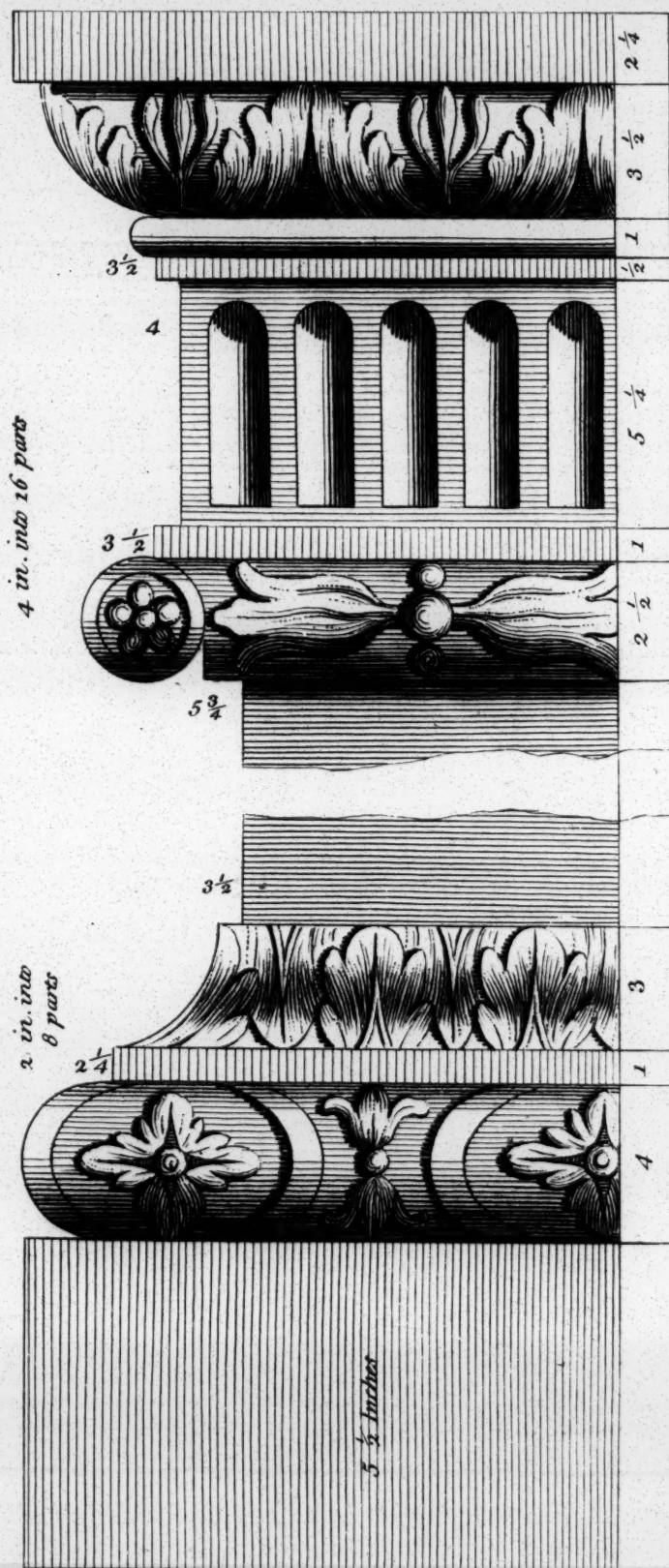
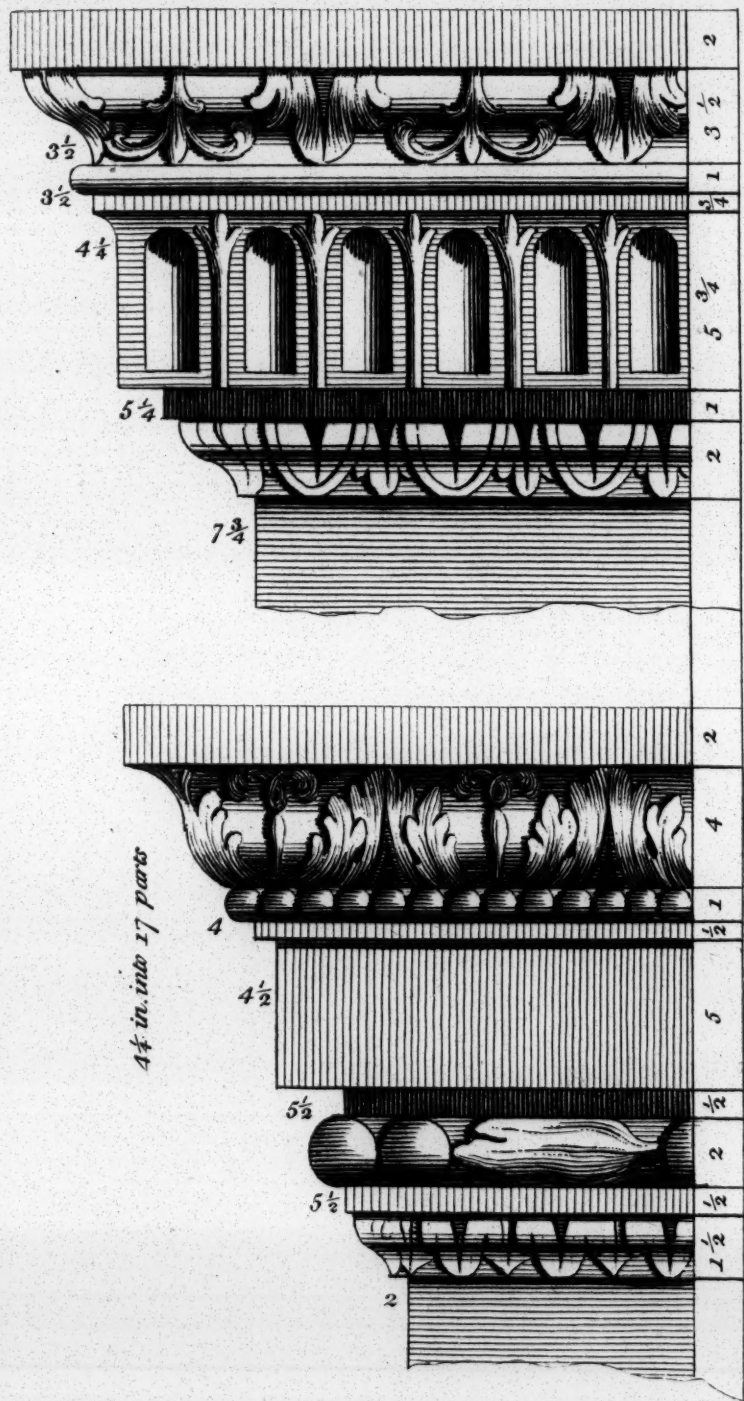


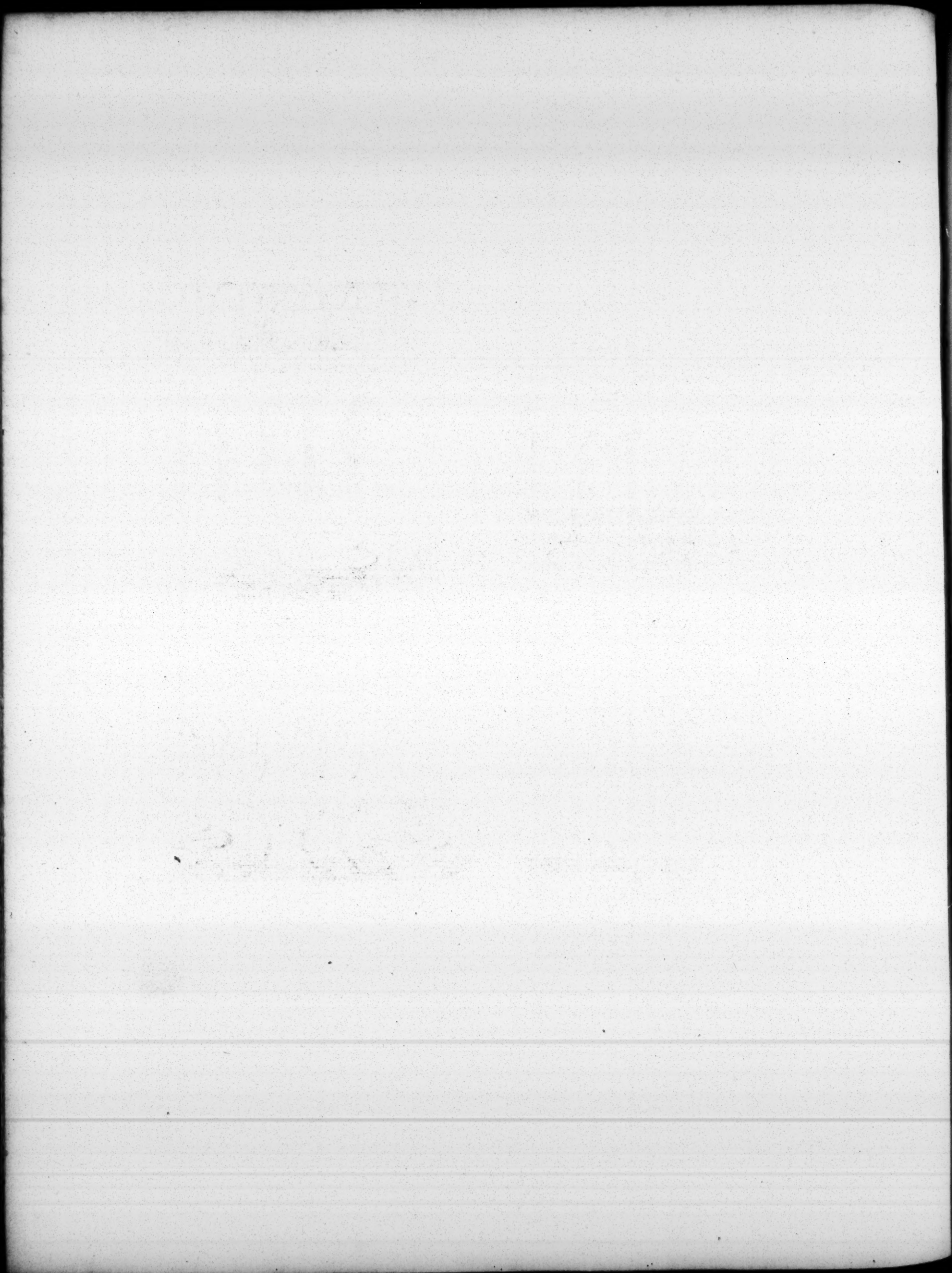


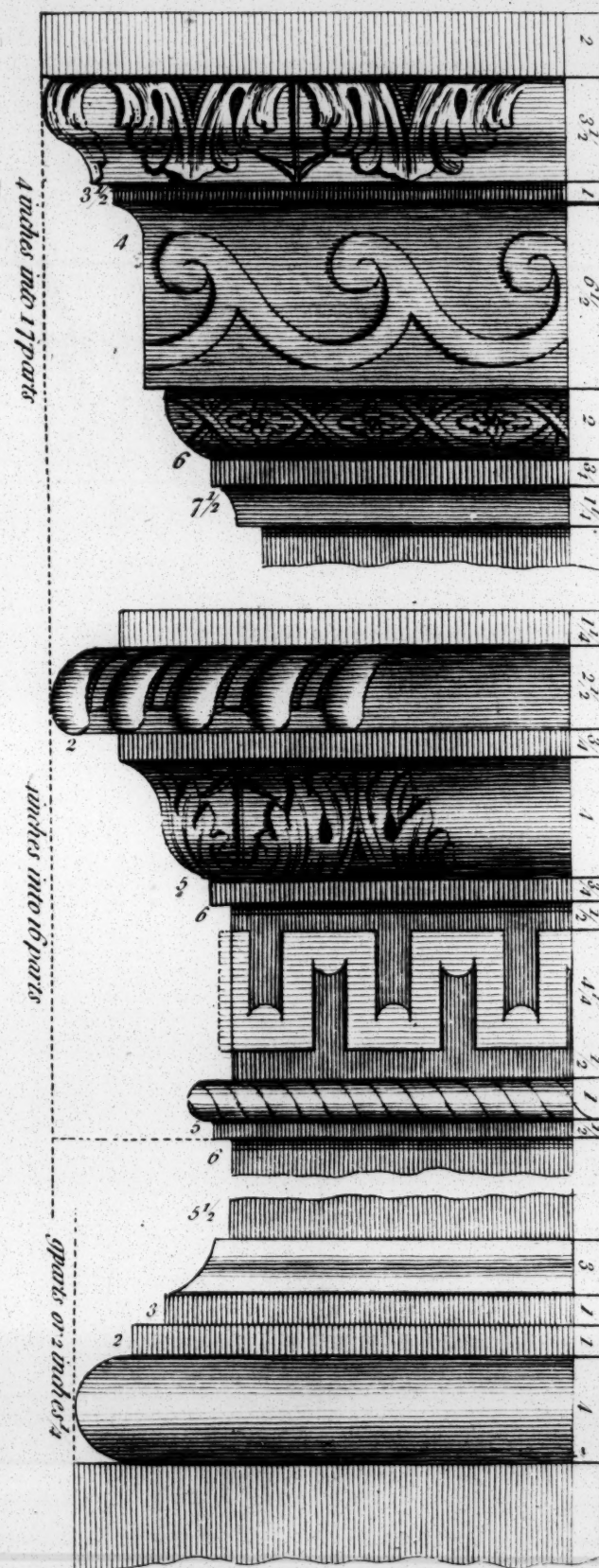
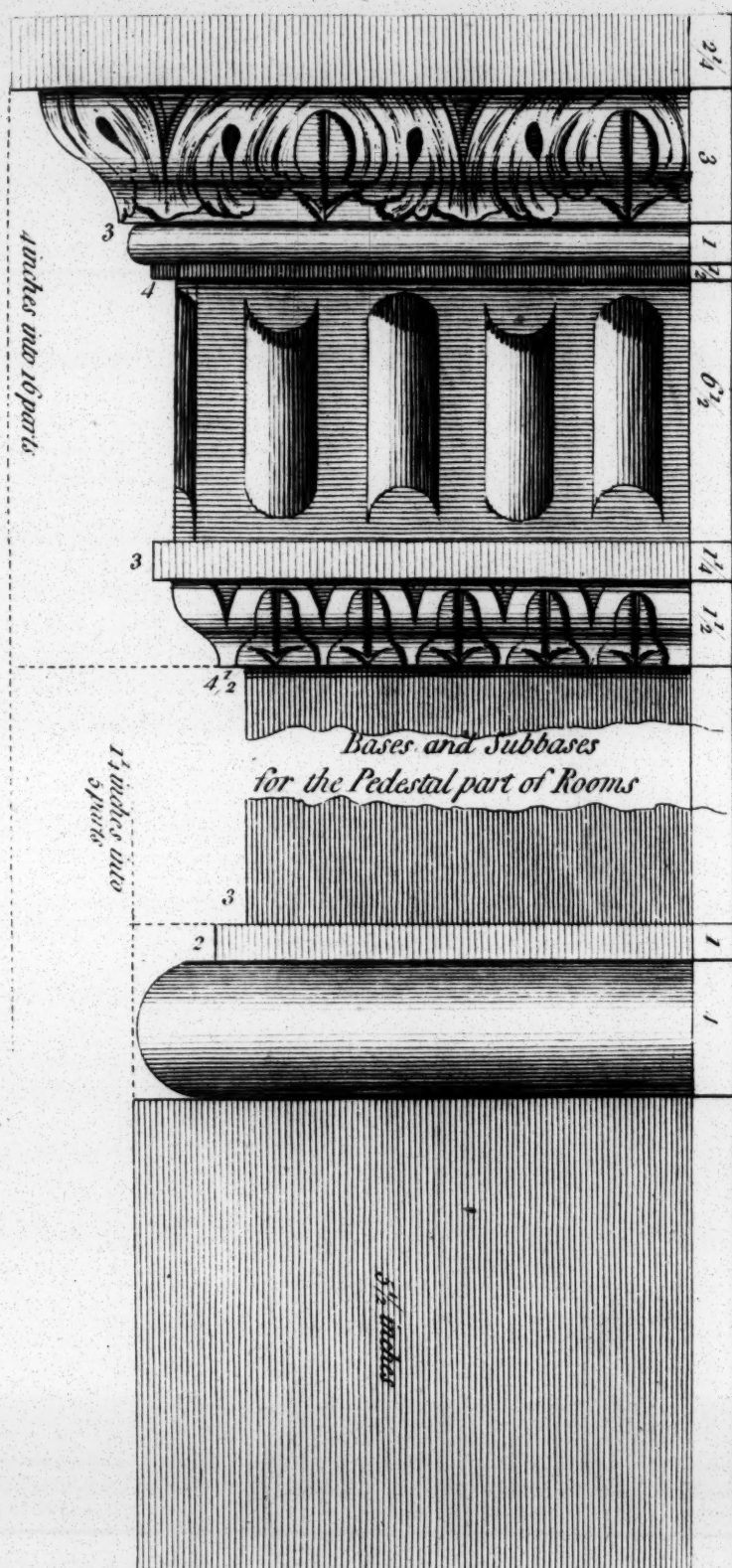
Substances for the Order of Doric.

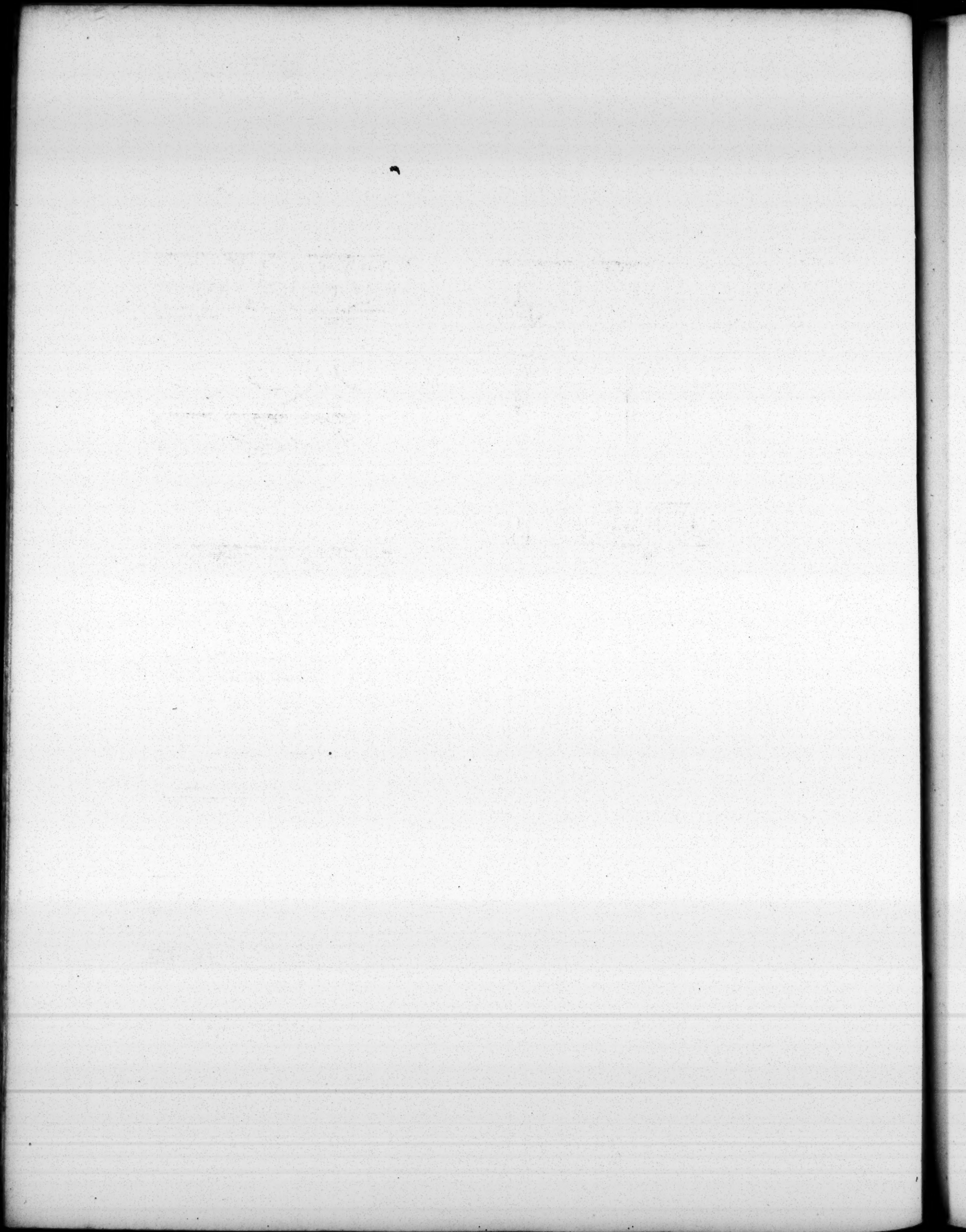


Base & Sub-base for Rooms.



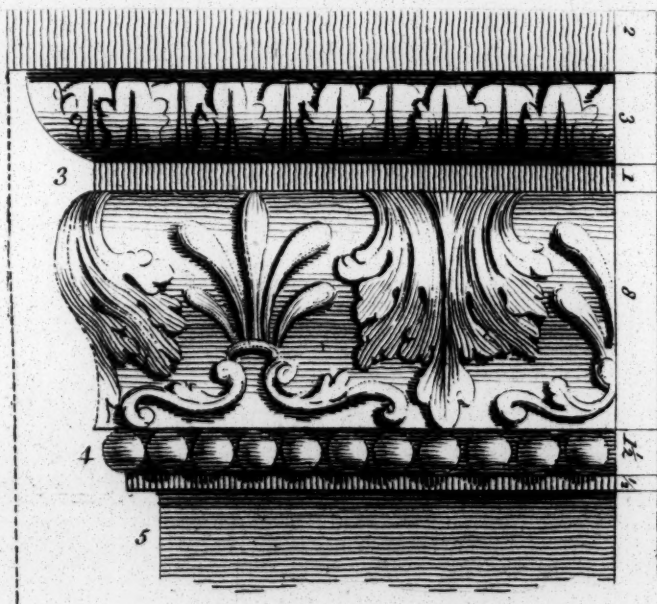
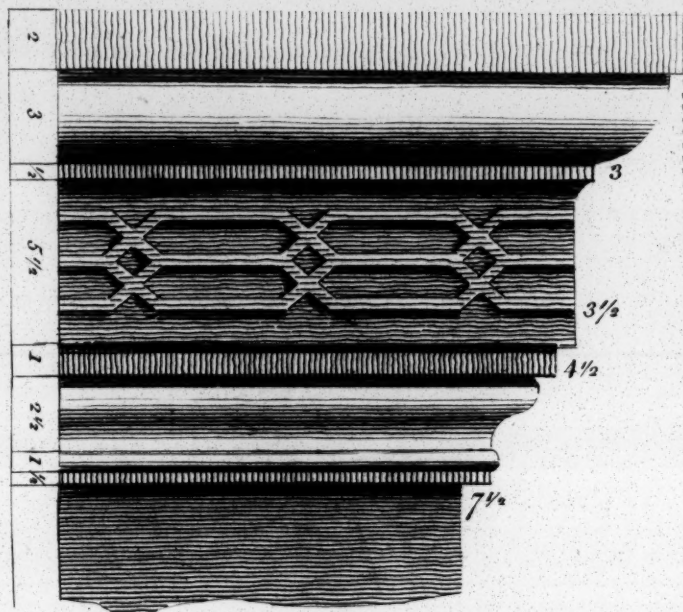
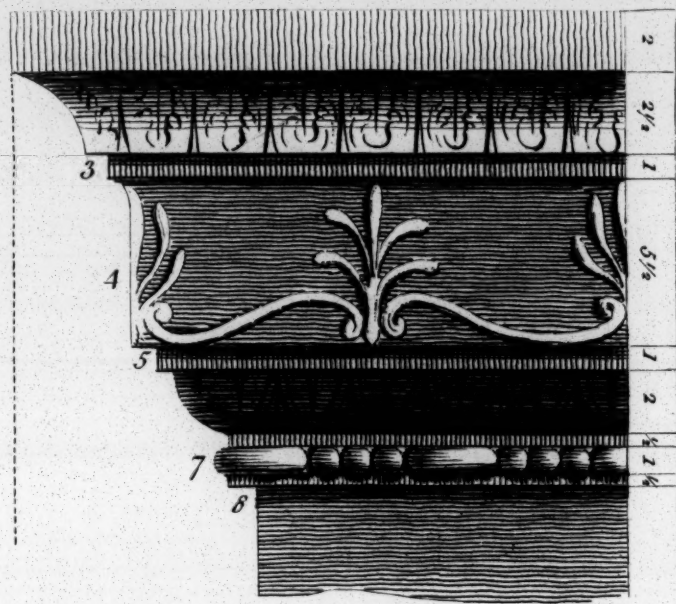




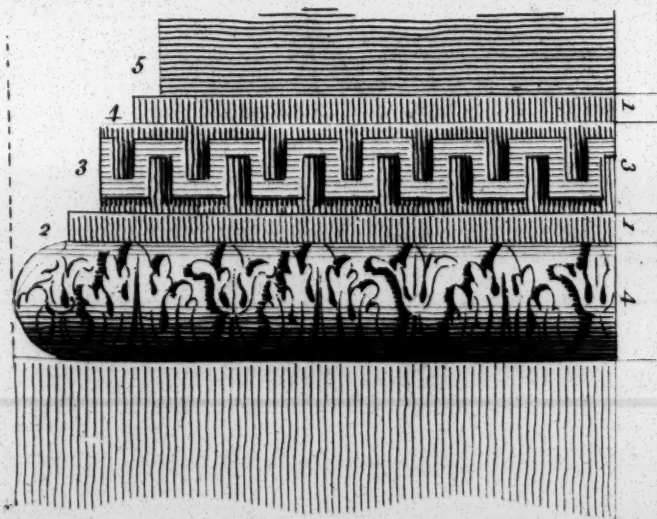
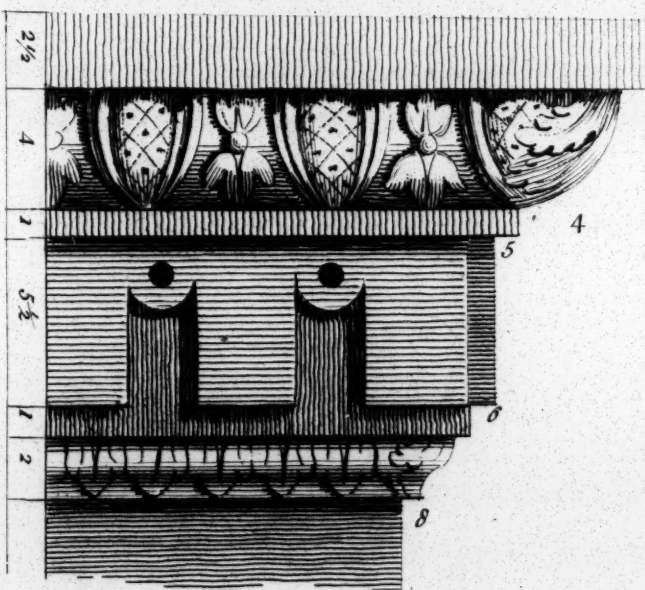


Bases & Sub-bases for Rooms.

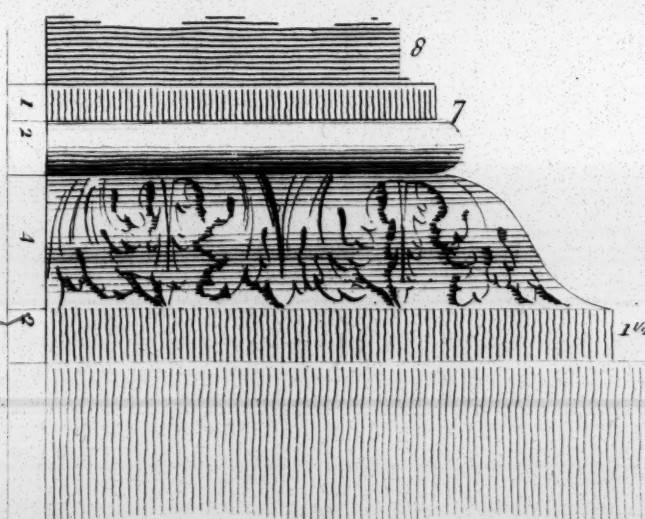
Plate LVI.



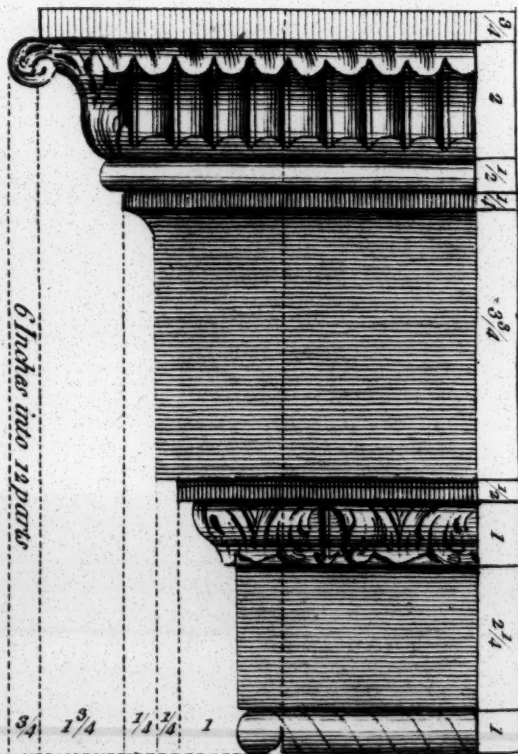
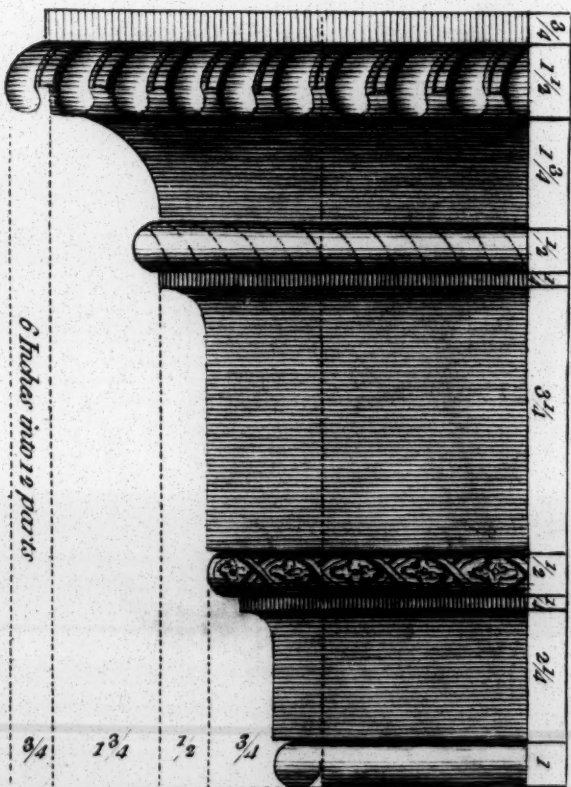
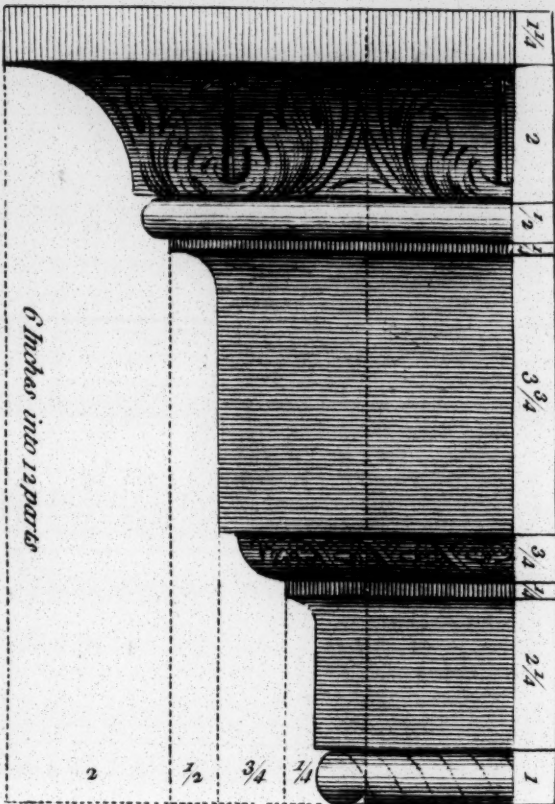
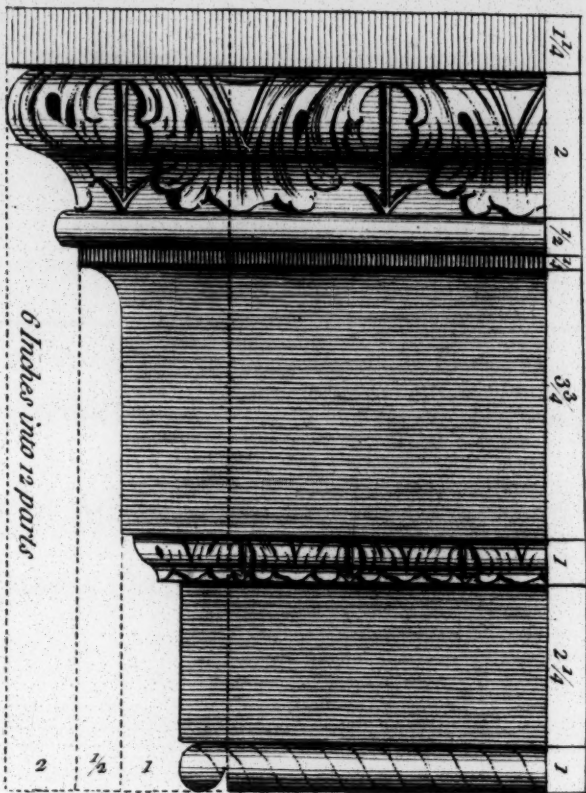
4 inches into 16 parts



*2 1/4 inches into 9 parts
2 inches ditto*

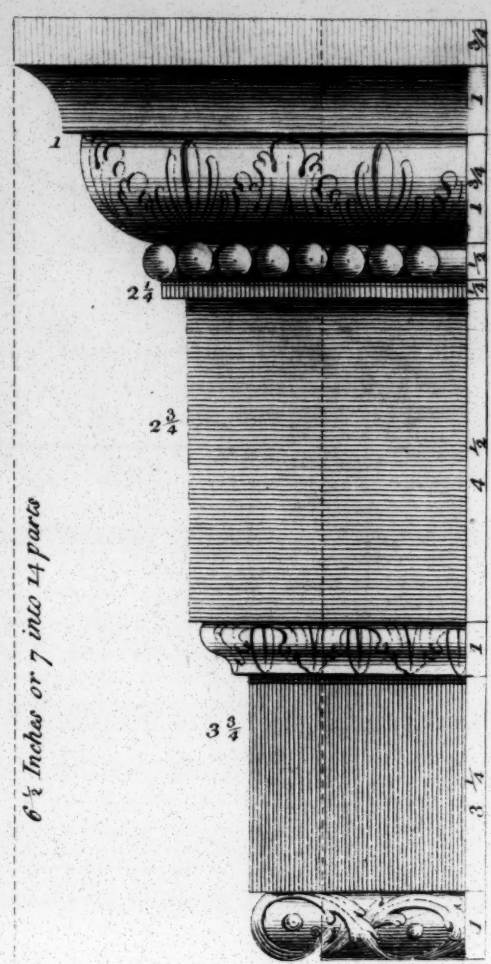
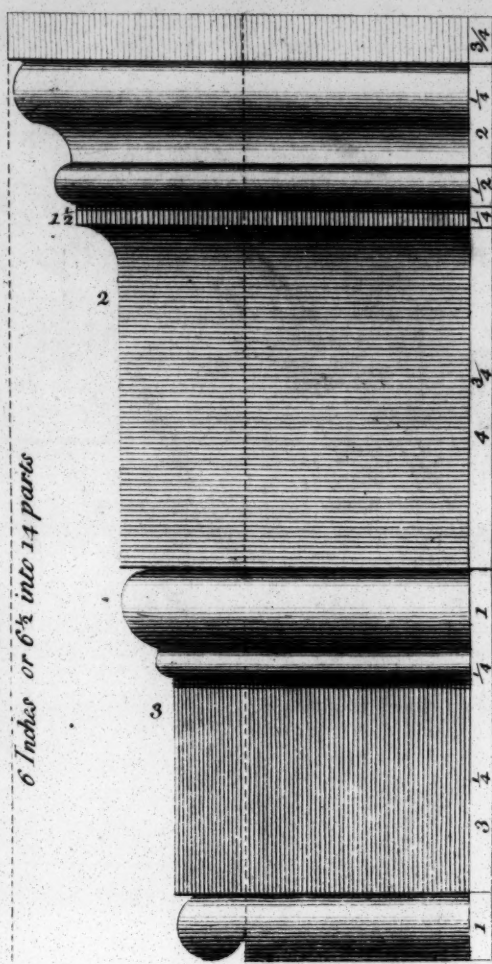
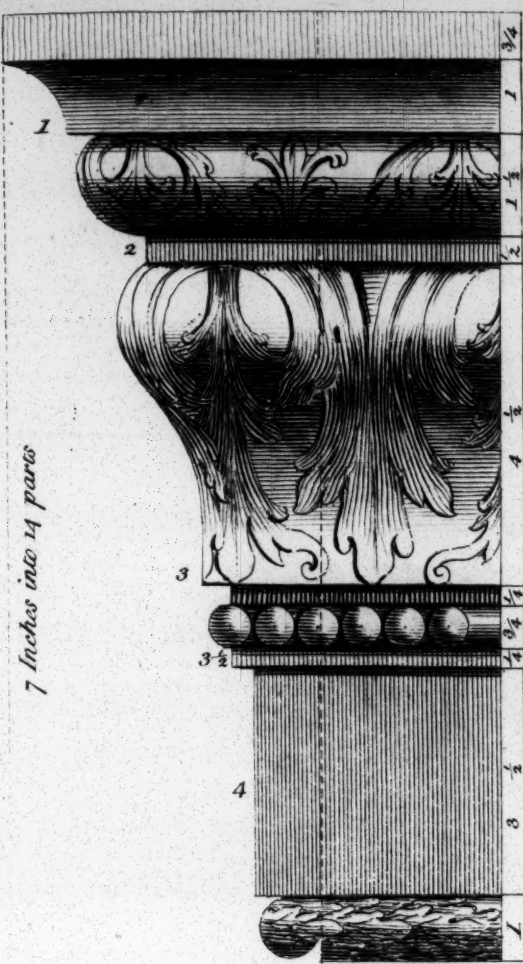




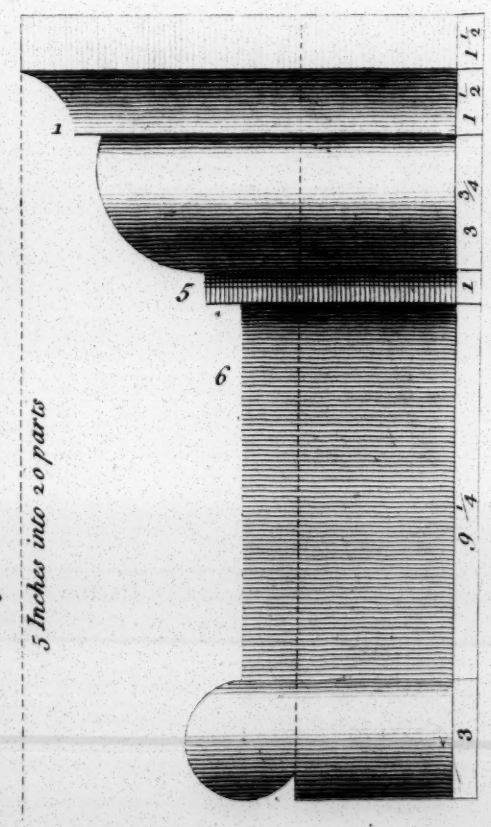
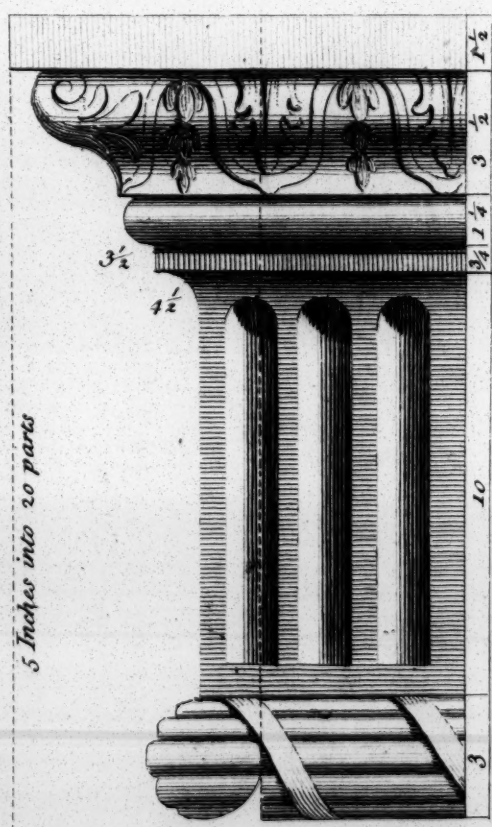
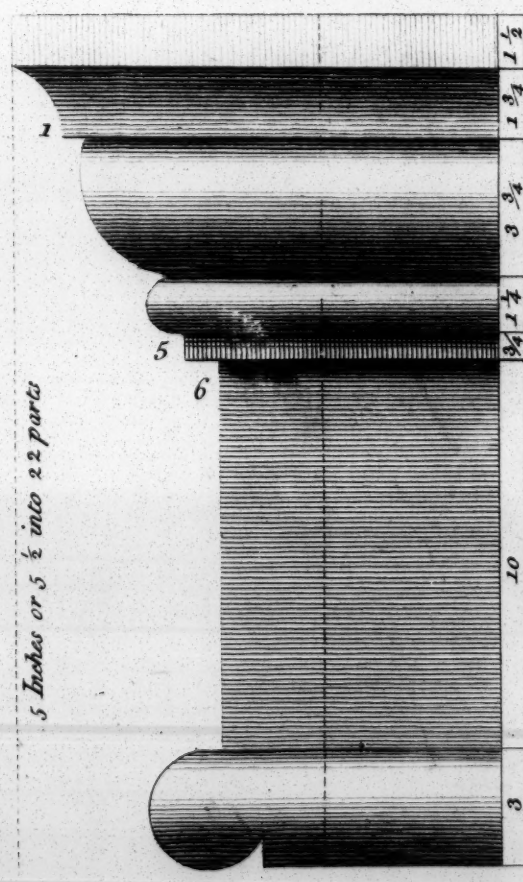


Architraves for Doors Windows &c. at large.

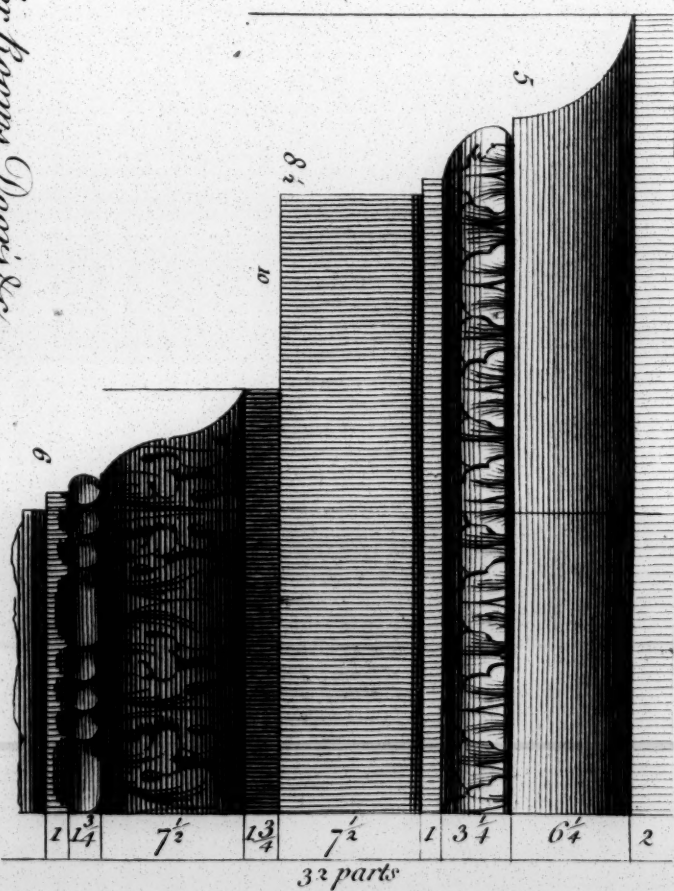
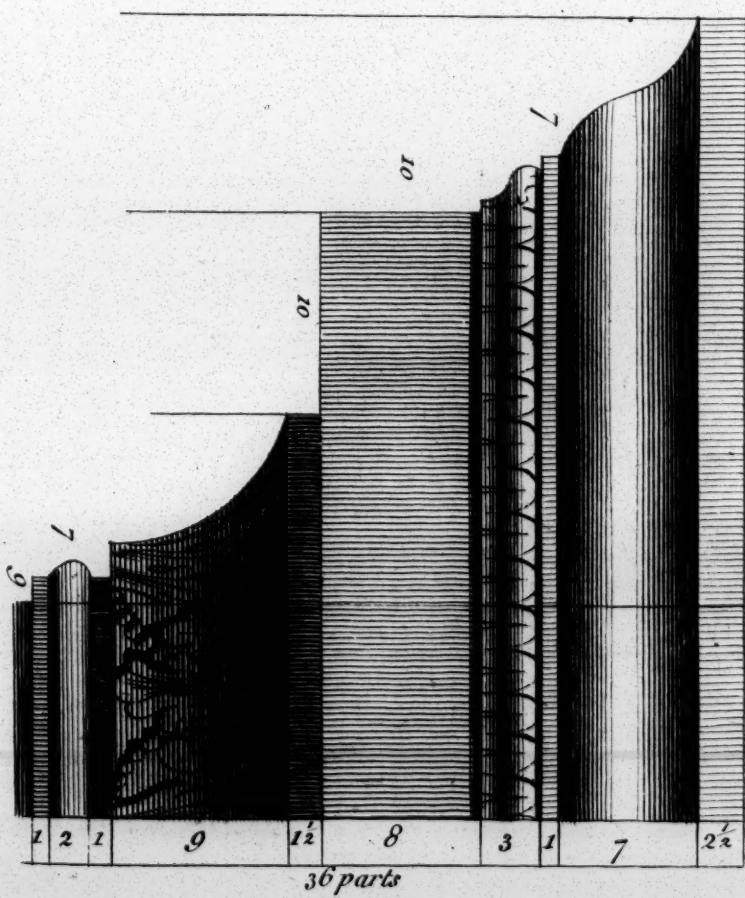
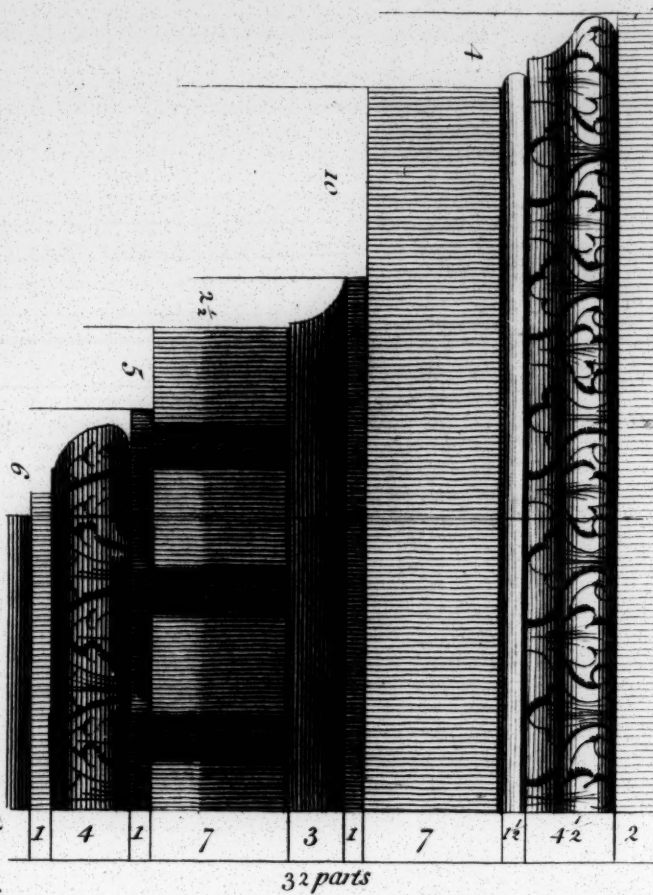
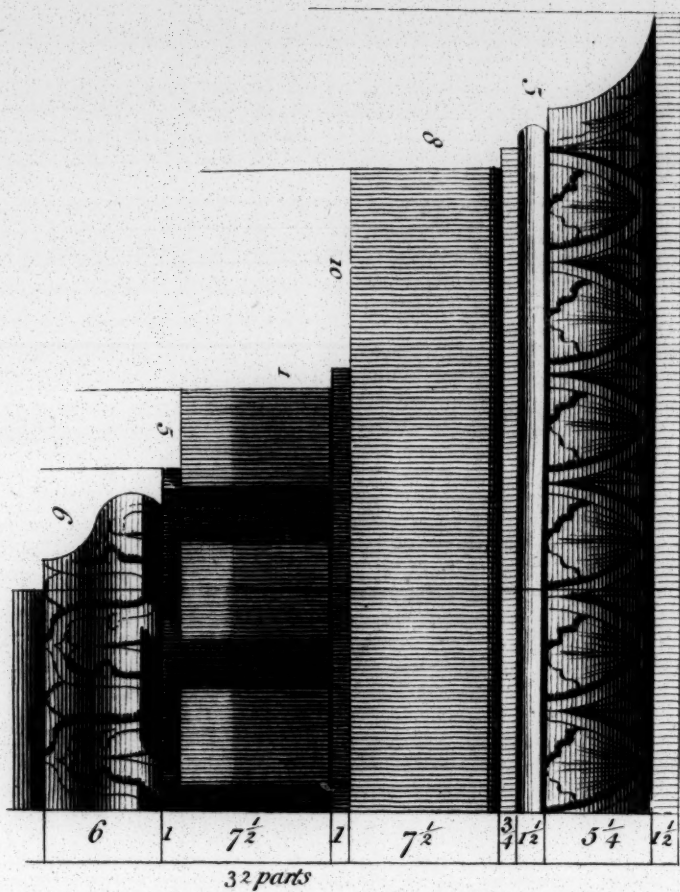




Architraves for Doors Windows &c.



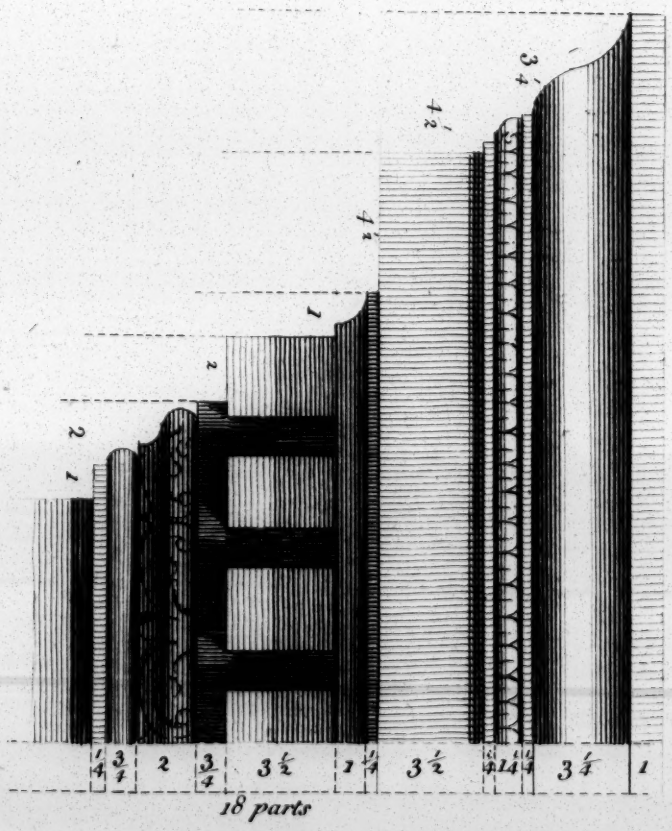
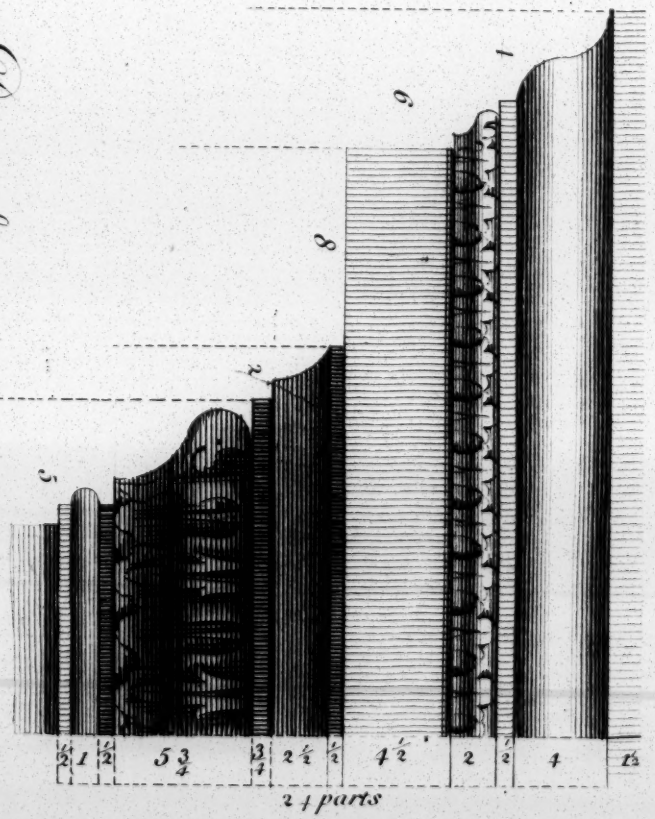
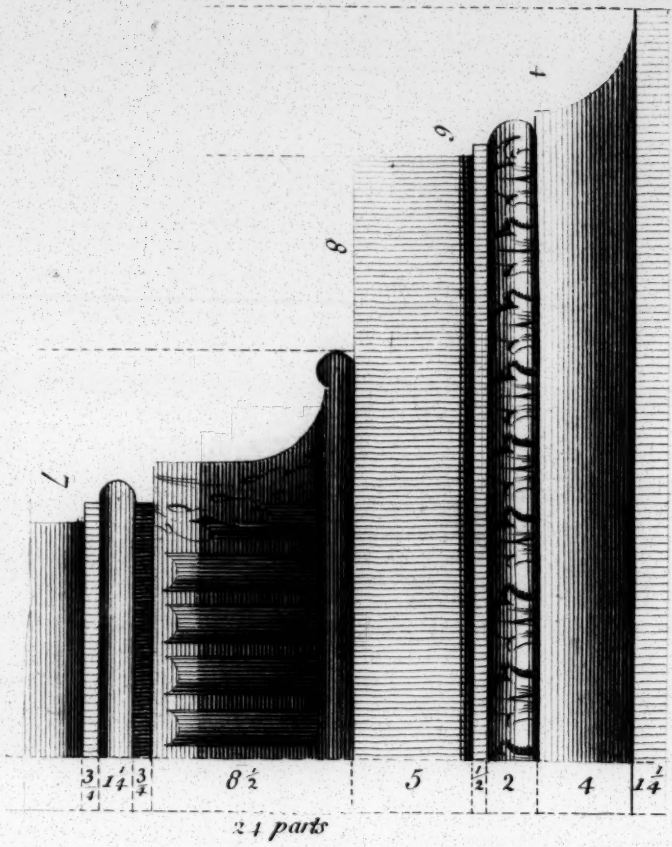
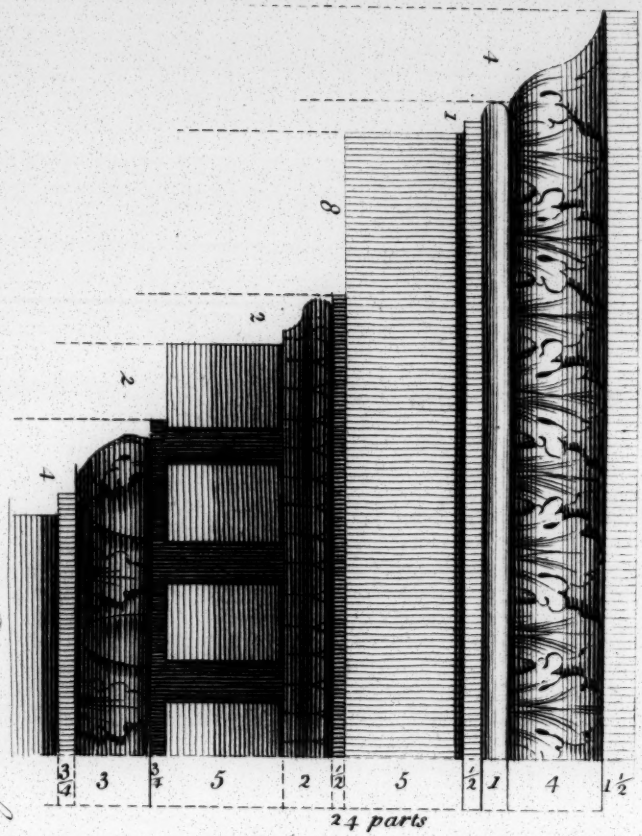




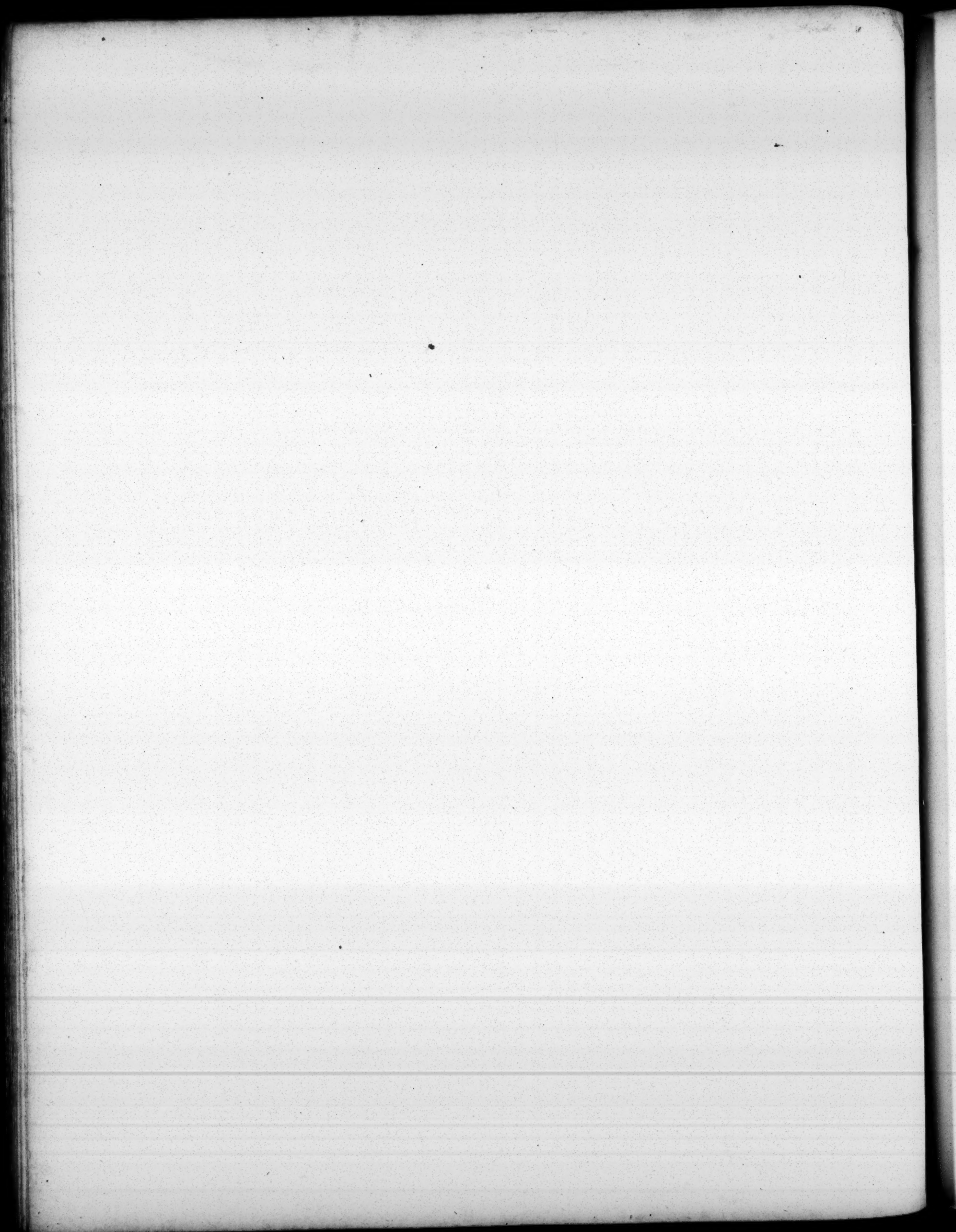
Similis for Roome, Dorr & Co.



Cornices for Rooms, Doors &c.

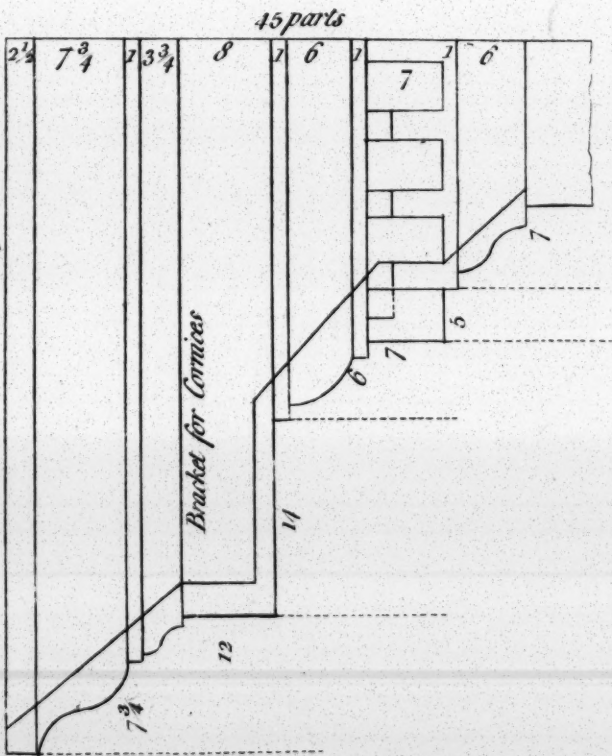


For Rooms is part of the whole height. For Doors from 4 inches to 4 1/2.
For Chimneys from 4 inches to 4 1/2.

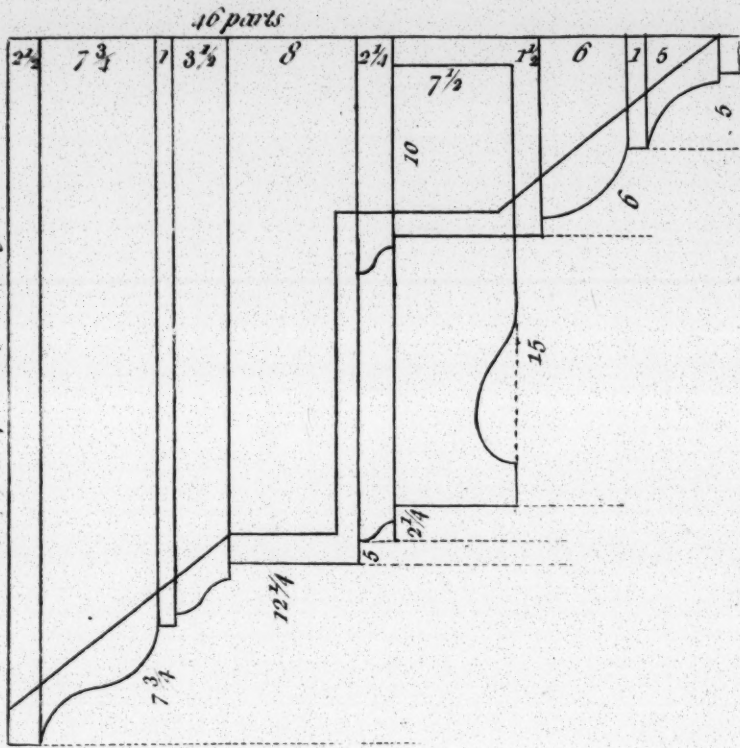


Cornices for Rooms &c.

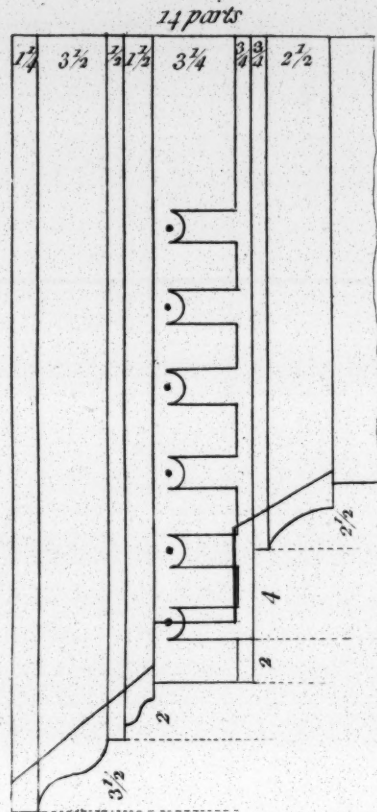
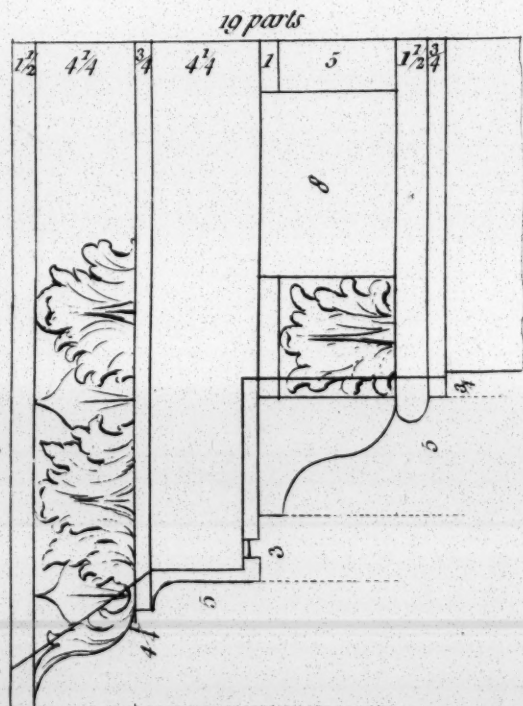
Cornices $\frac{1}{16}$ th part of the Height. or $\frac{1}{48}$ part



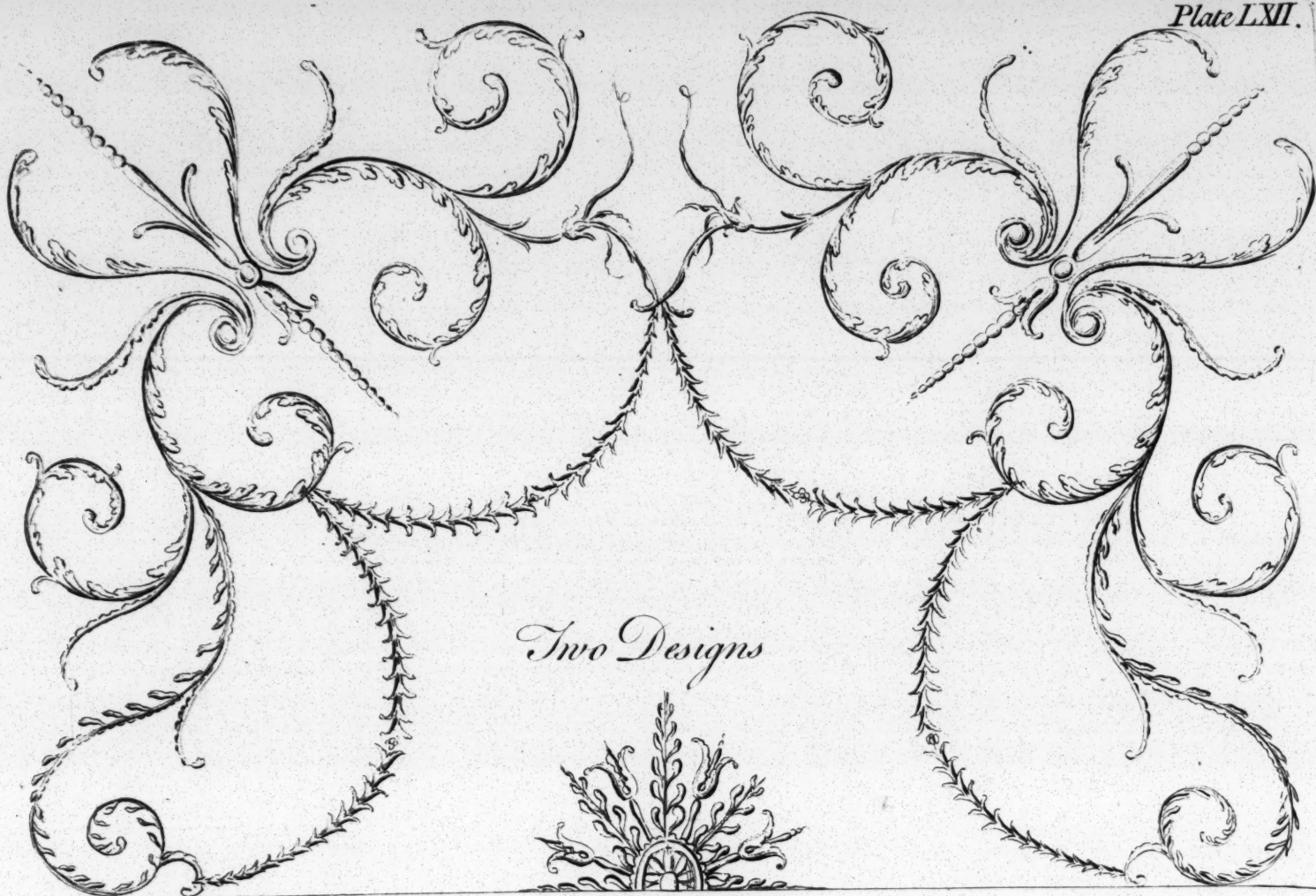
Cornices $\frac{1}{16}$ th part of the Height.



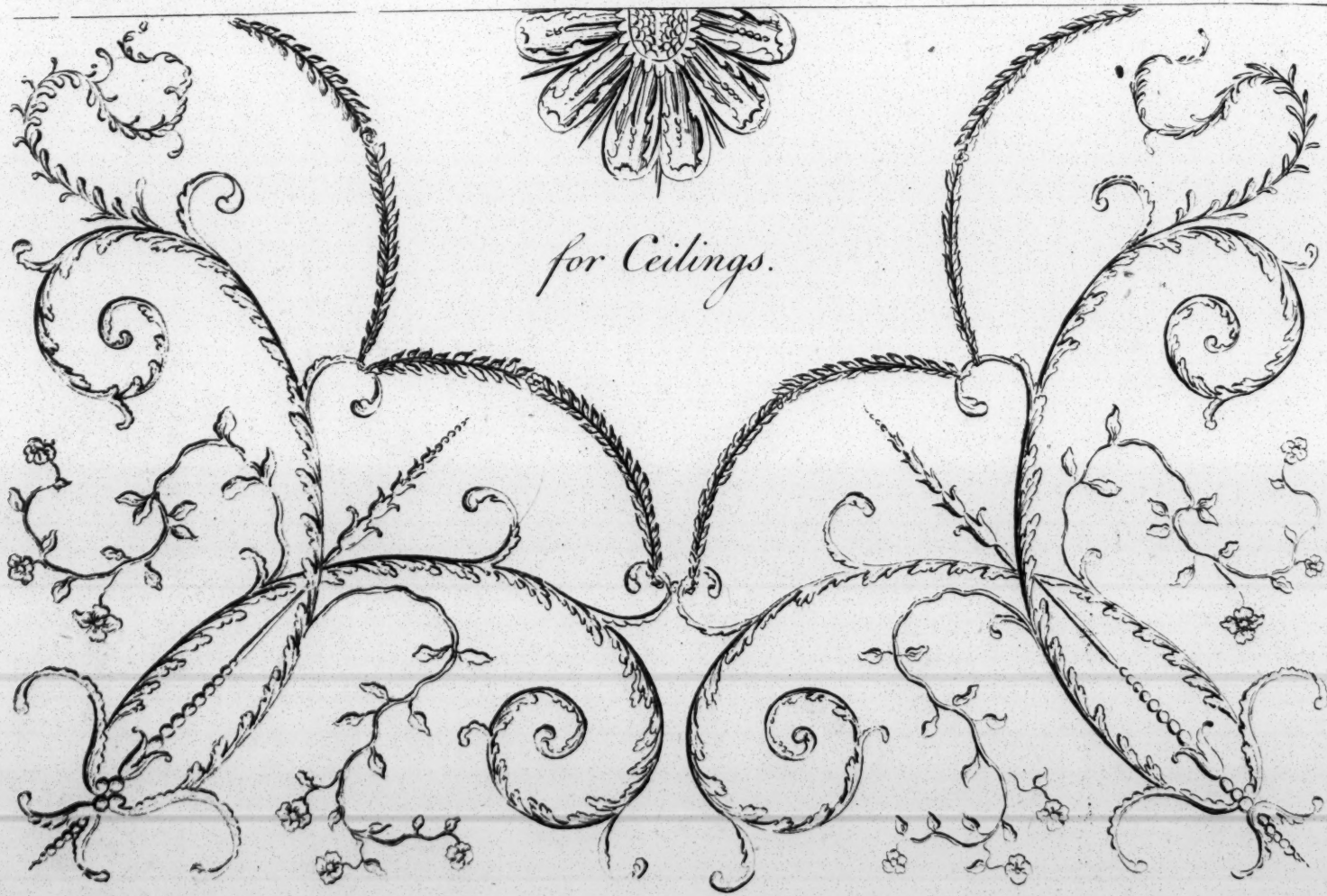
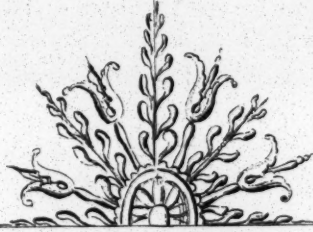
Cornices $\frac{1}{16}$ th or $\frac{1}{18}$ th part of the Height for Rooms &c.



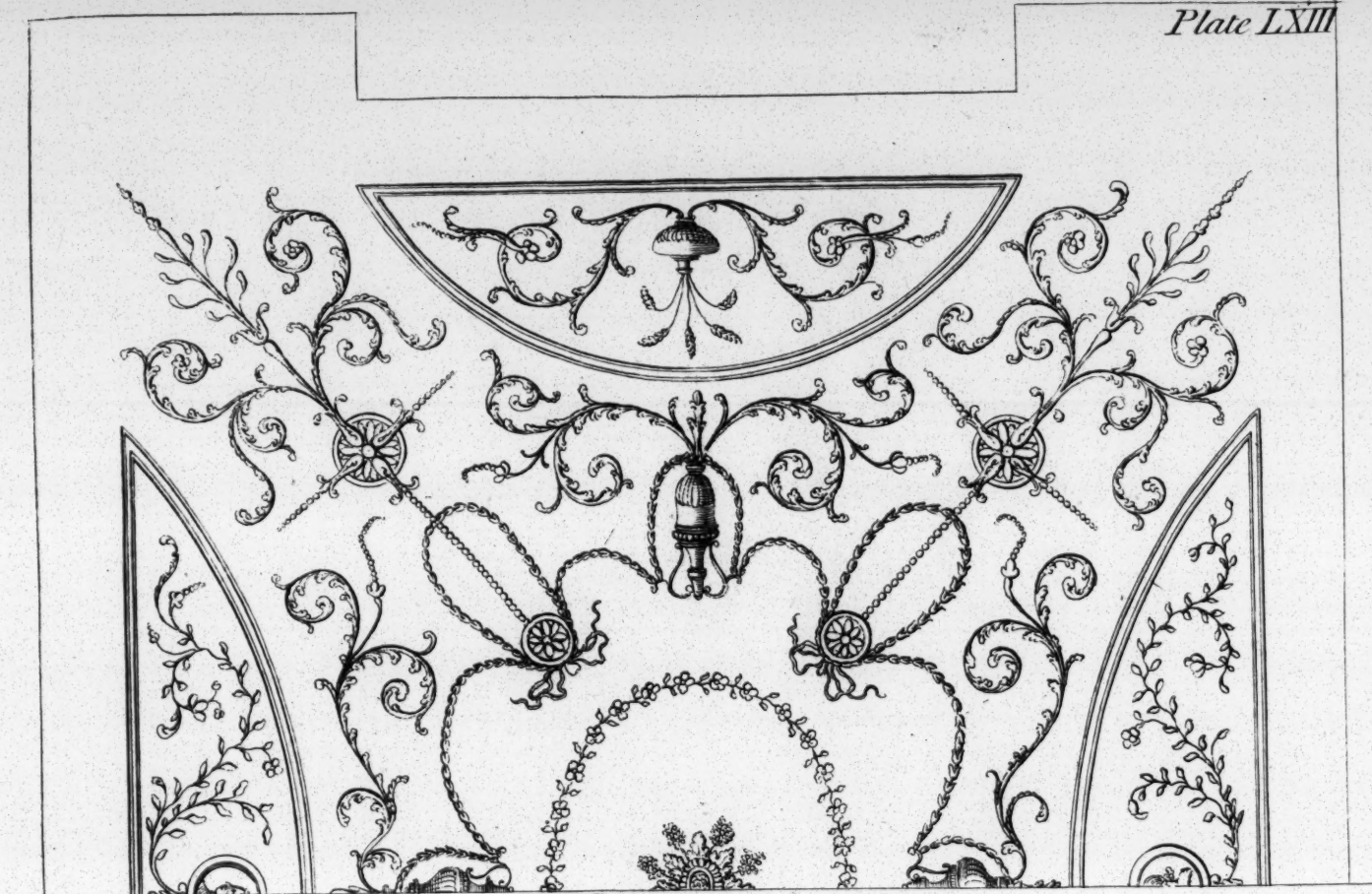




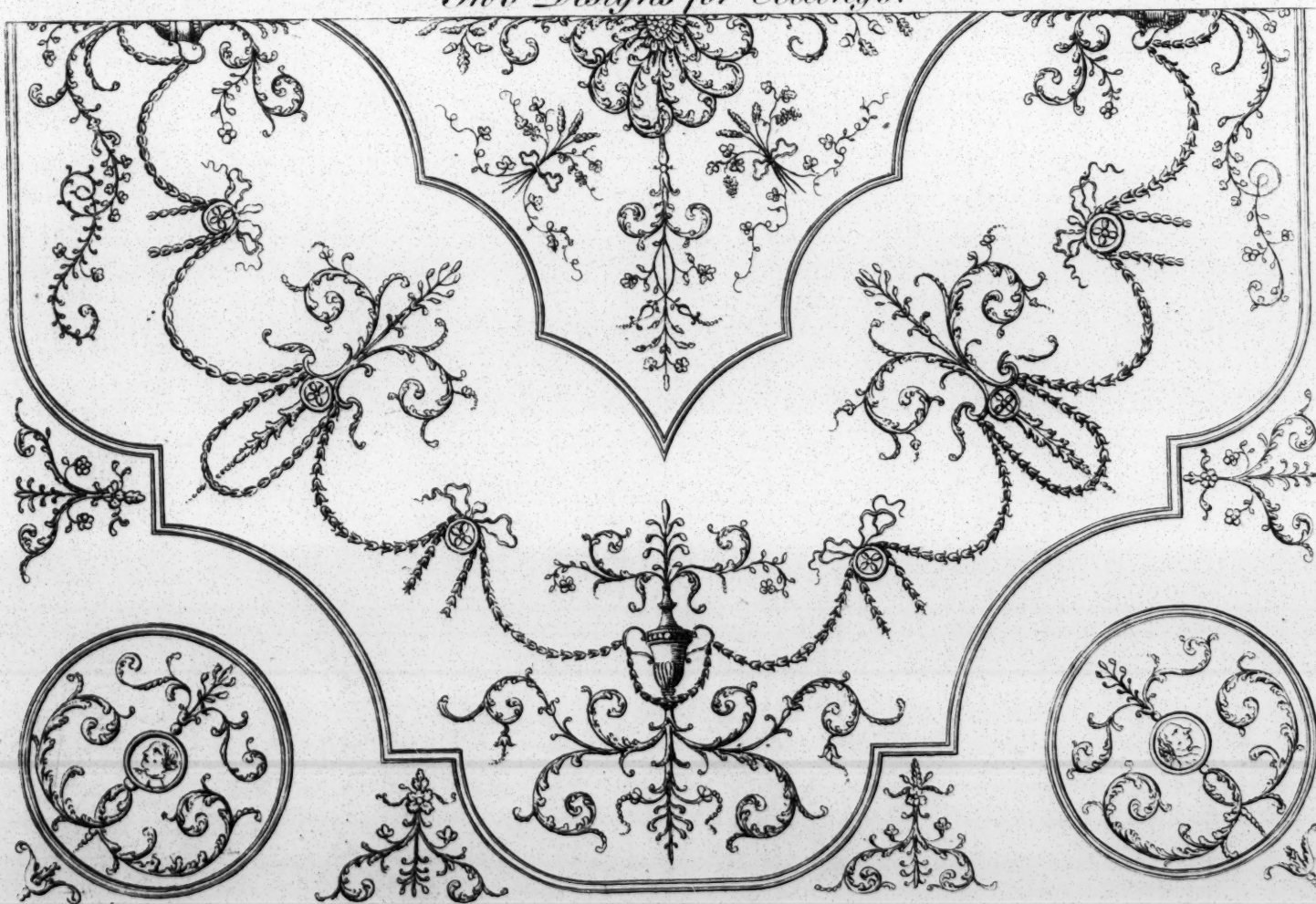
Two Designs



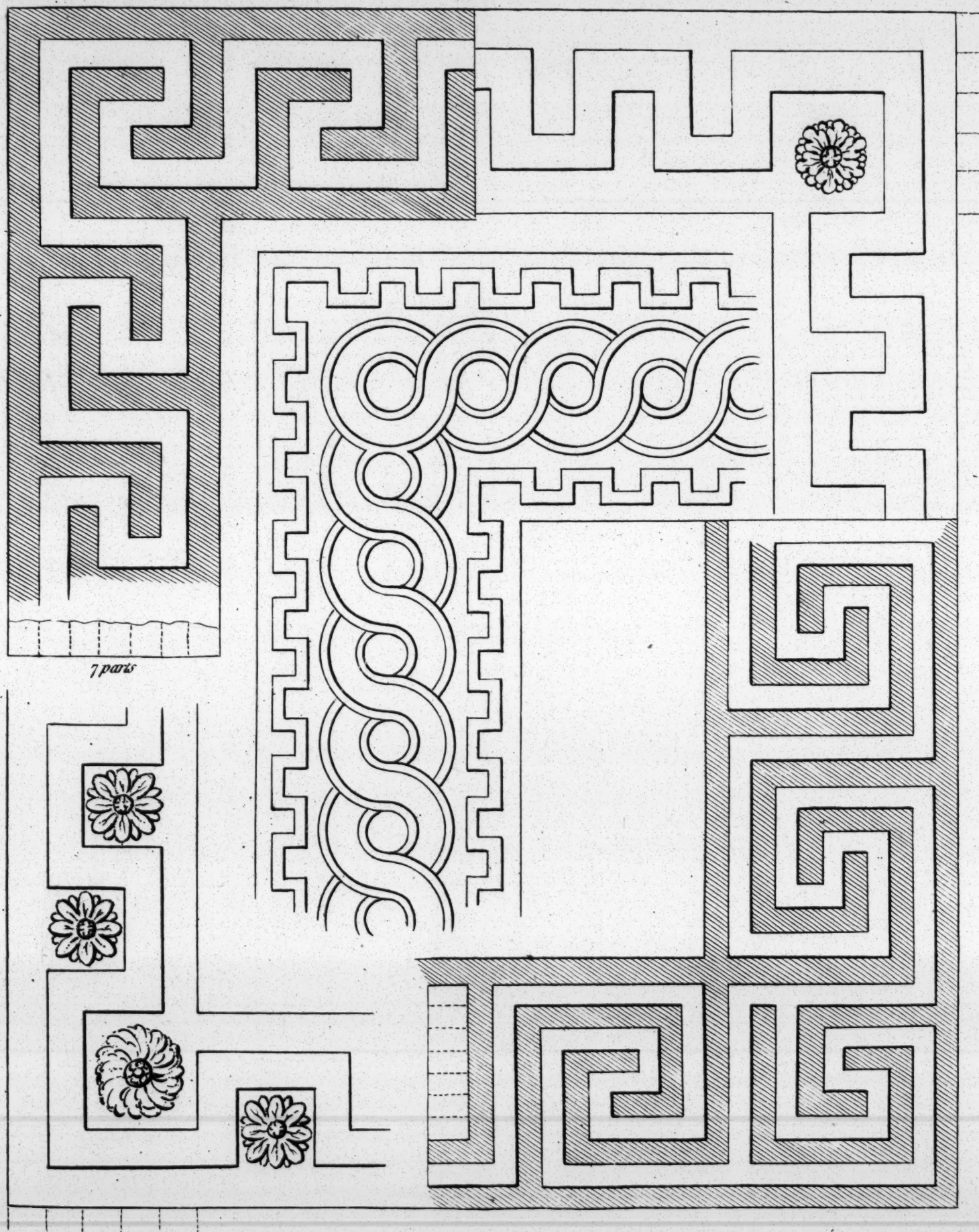
for Ceilings.



Two Designs for Ceilings.

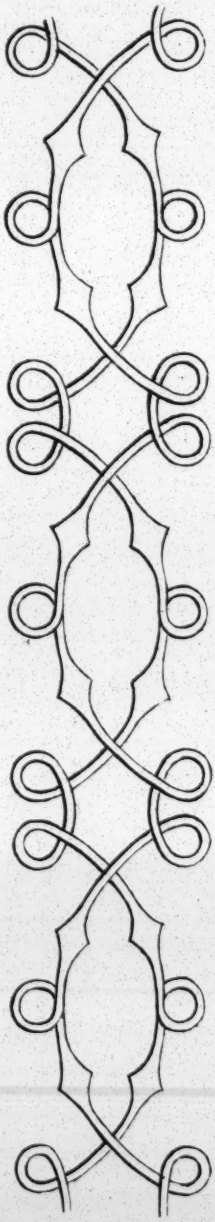
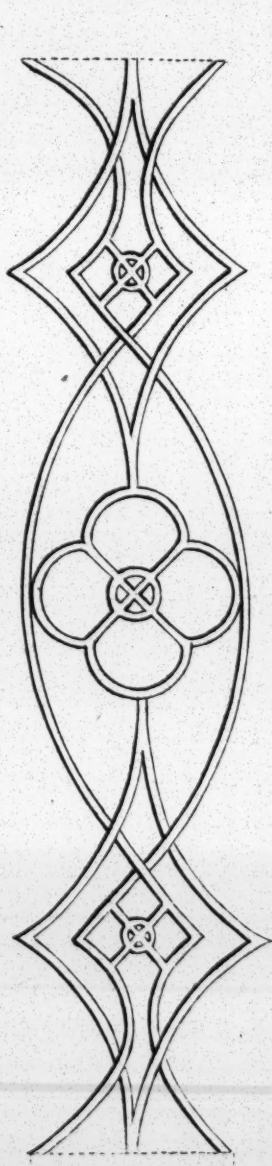
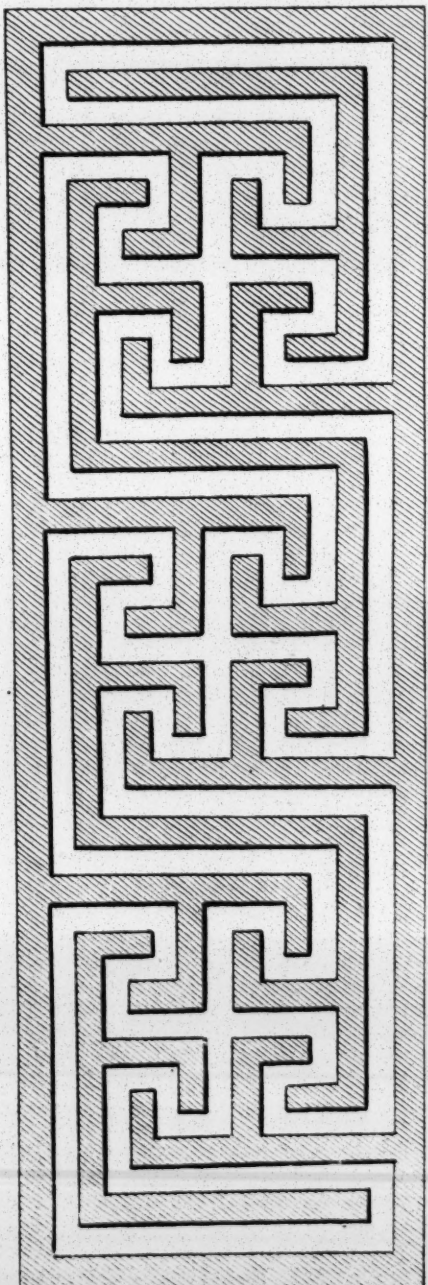
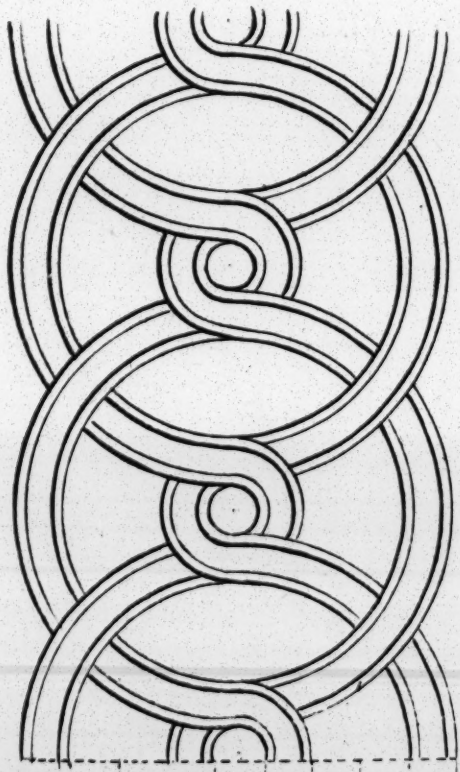
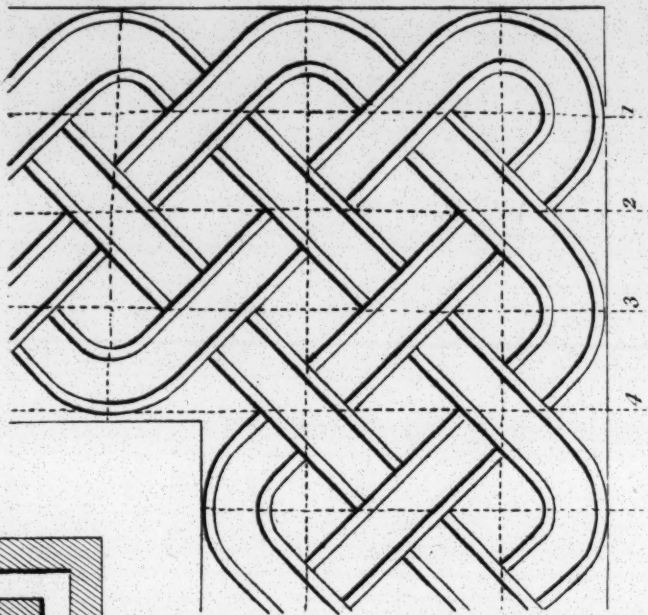
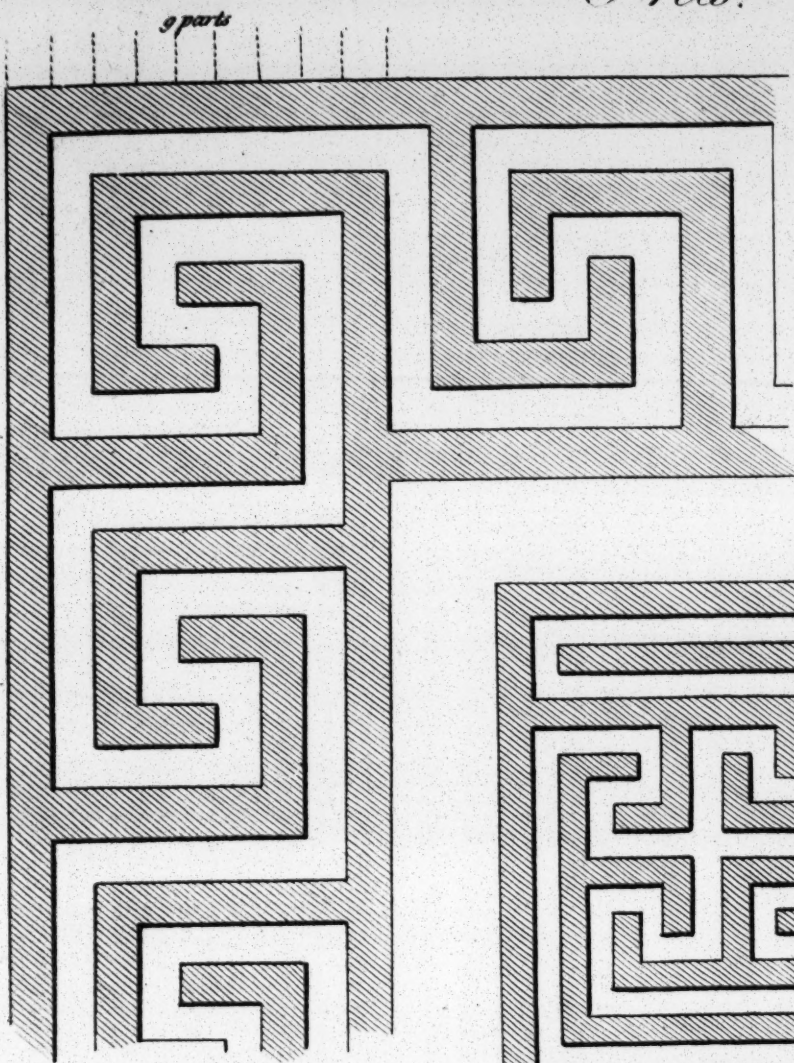








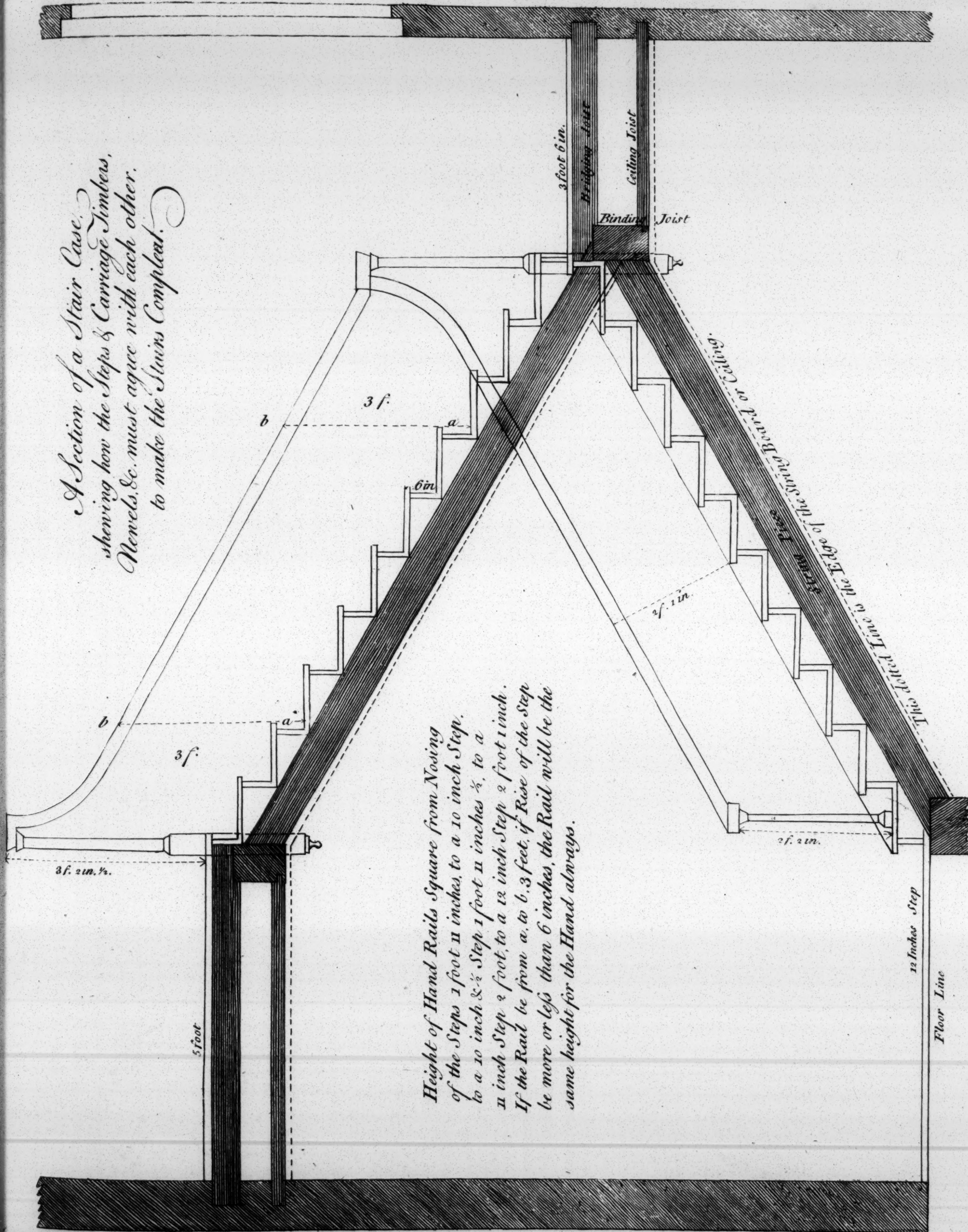
Frels.



9 parts

15 parts

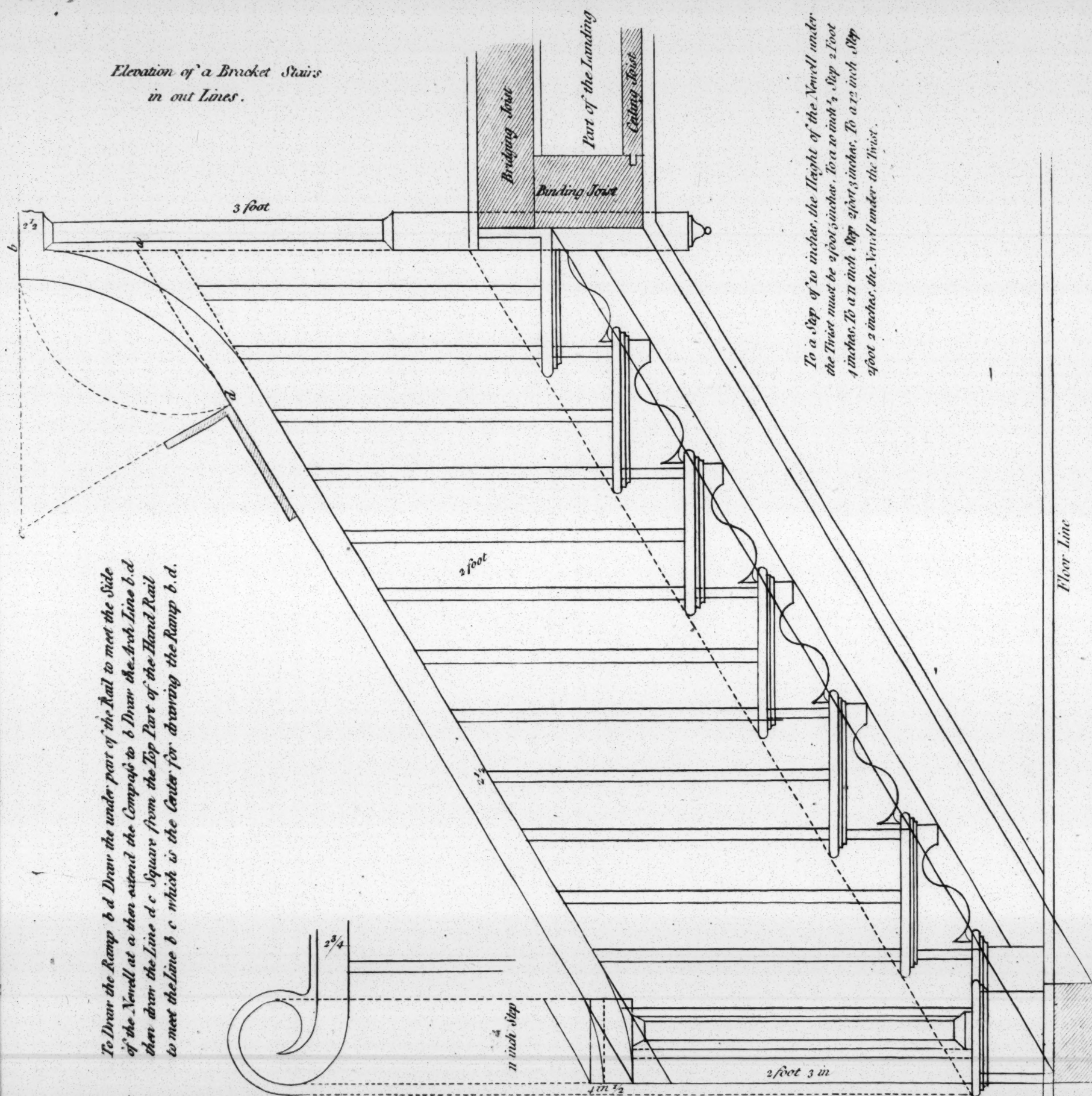
*A Section of a Stair Case,
shewing how the Steps & Carriage Timbers,
Newels, &c. must agree with each other,
to make the Stairs Compliant.*

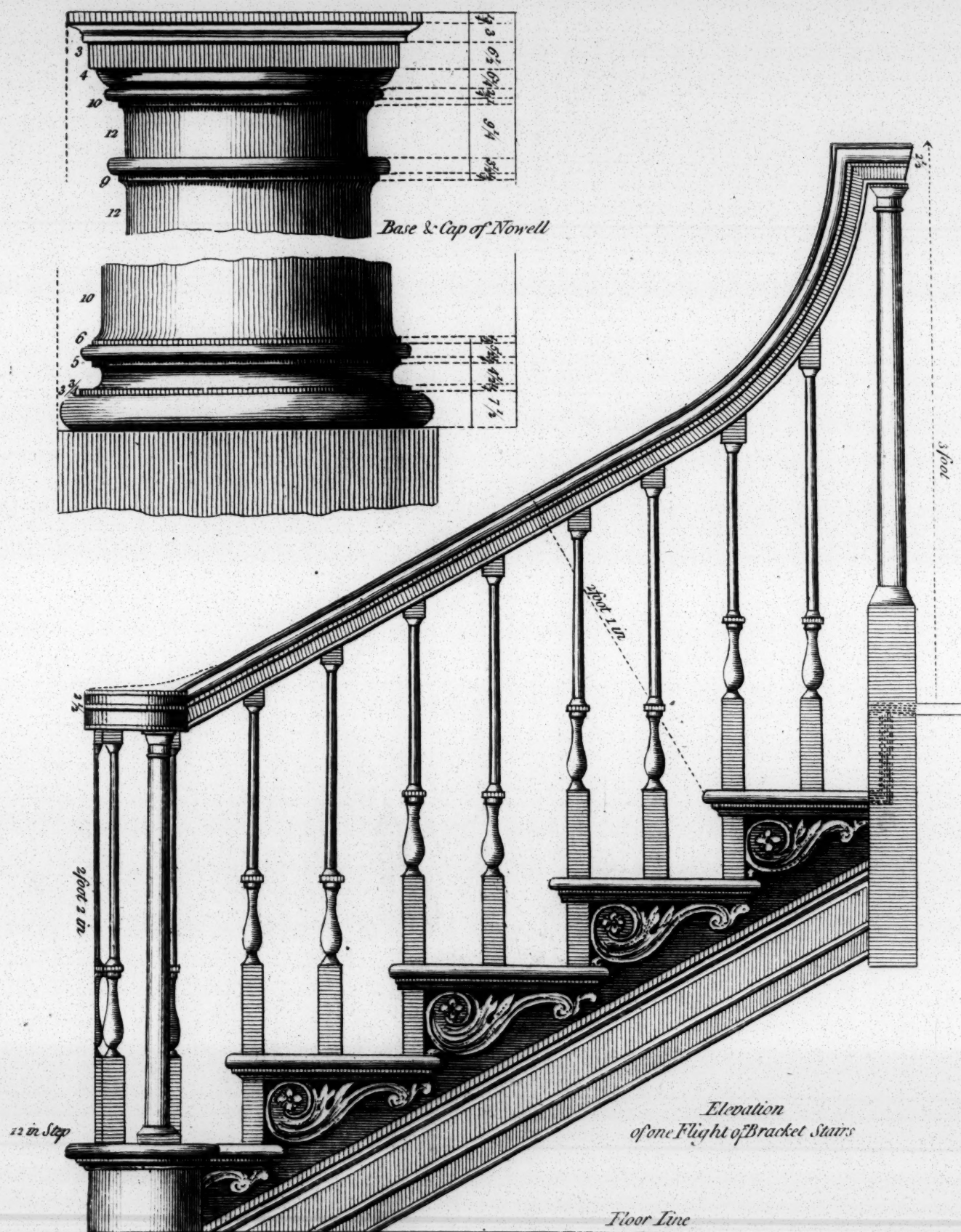


Floor Line

12 Inches Step

*Elevation of a Bracket Stairs
in out Lines.*







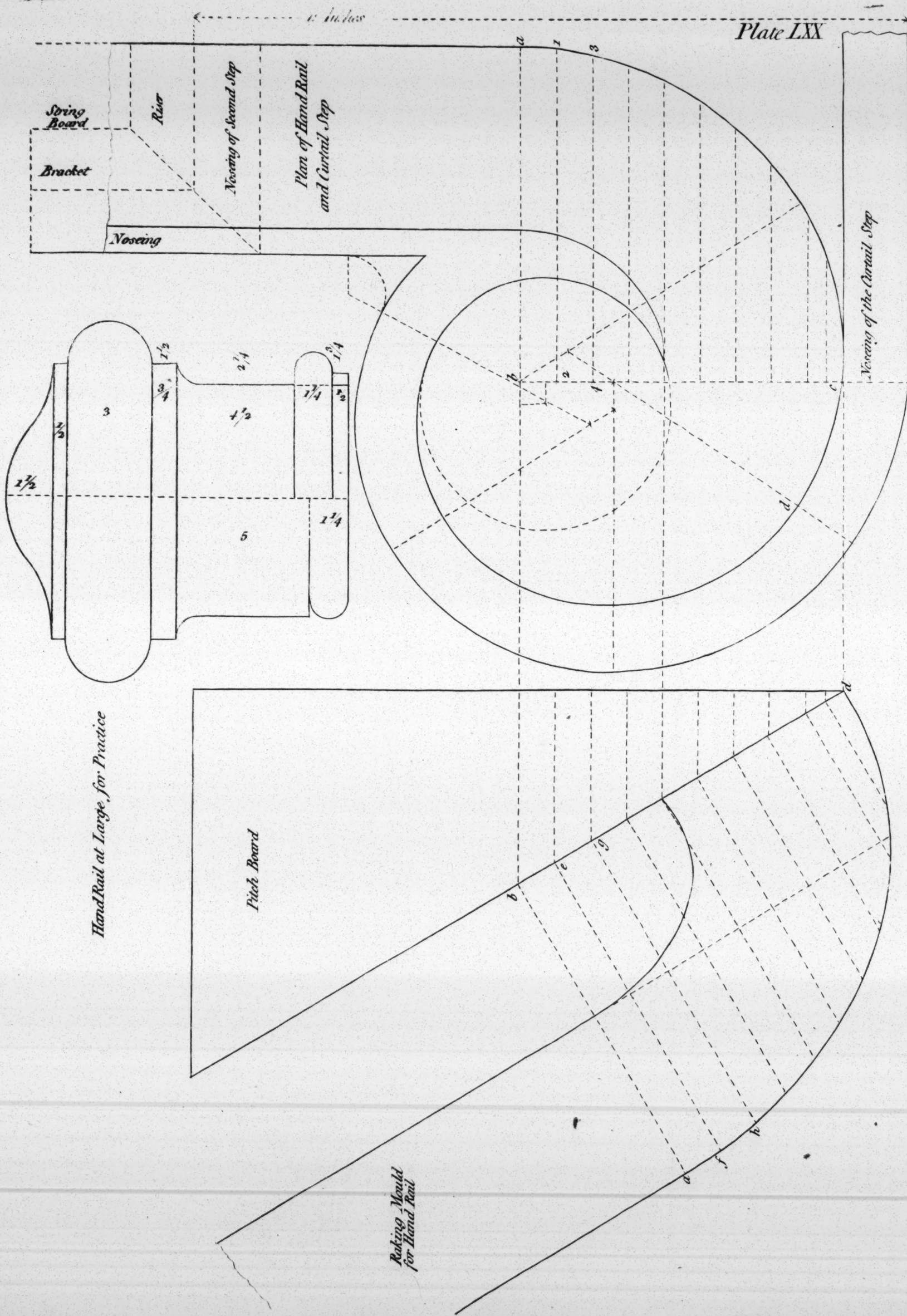
To Face PLATE LXIX.

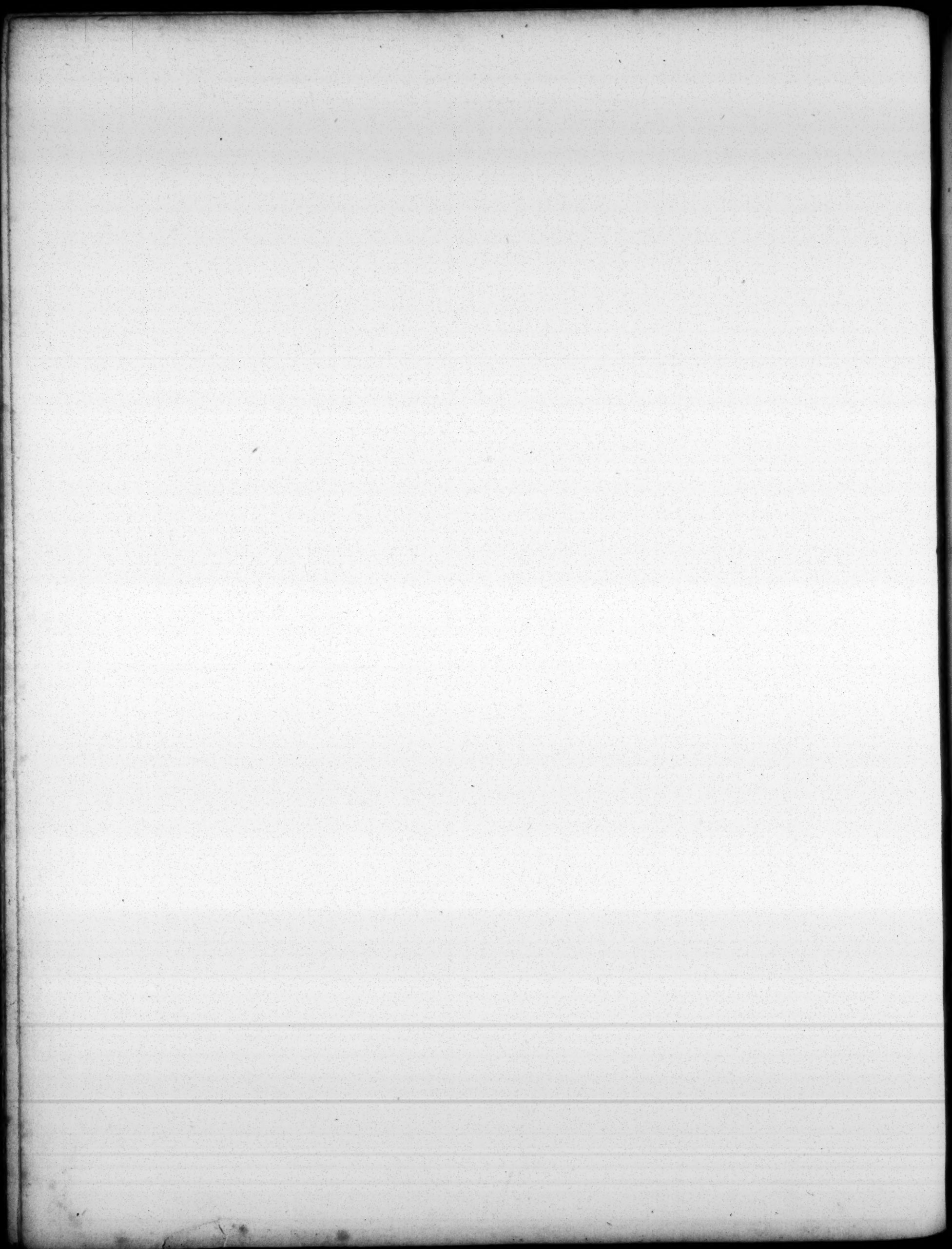
To draw the Plan and Scroll of a twist Rail for a Stair-case.

DR AW a Circle equal to the Breadth of two Steps, and divide it into eight Parts, then draw a Circle round the Centre five Inches Diameter, as 2, 3, then draw the Line *e, f*, and set one Foot of the Compass at *e*, and draw the Arch Line 7, 0, which must be divided into eight Parts, and draw Lines from *e*, thro' each eighth Part to the Line 1, 2, 3, 4, 5, &c. then set the Compass in the Centre of the Scroll, and draw the dotted Lines from 1 on the Scale to 1 on the Edge of the Rail, and from 2 to 2 on the Edge of the Rail, and so for all the Rest to each eighth Part of the Circle, which gives the outer Edge of the Rail.

To find the Centre for drawing each eighth Part, set one Foot of the Compass in the Centre of the Scroll, and take the Distance to *f*, with the same Radius; set the Foot at *e*, and make a Mark at *c*, and with the same Radius set one Foot at 1 on the Edge of the Rail, and bisect the former Stroke at *c*, which is the Centre for the first eighth Part, then take from the Centre of the Scroll to 1 on the Scale, and set one Foot at 1 on the Edge of the Rail, make a Mark in the Eye and move the Compass to 2 on the Edge of the Rail, and bisect the former Stroke; that is the Centre for the second eighth Part, and so on for all the Rest. The Centre for the Front of Riser and Nosing of Step are the black Dots, one fifth Part from the Rail to the Nosing of the Step without the other Centre; the Pieces which make the Twist-part of the Rail are *d, e, b*, on the raking Mould the Twist begins at *a* on the Edge of the Rail, and ends at three on ditto, the remaining Part is level; the lower Part of the Scroll from 2 is cut out of a parallel Piece, as represented by *g* on the Newel, &c.



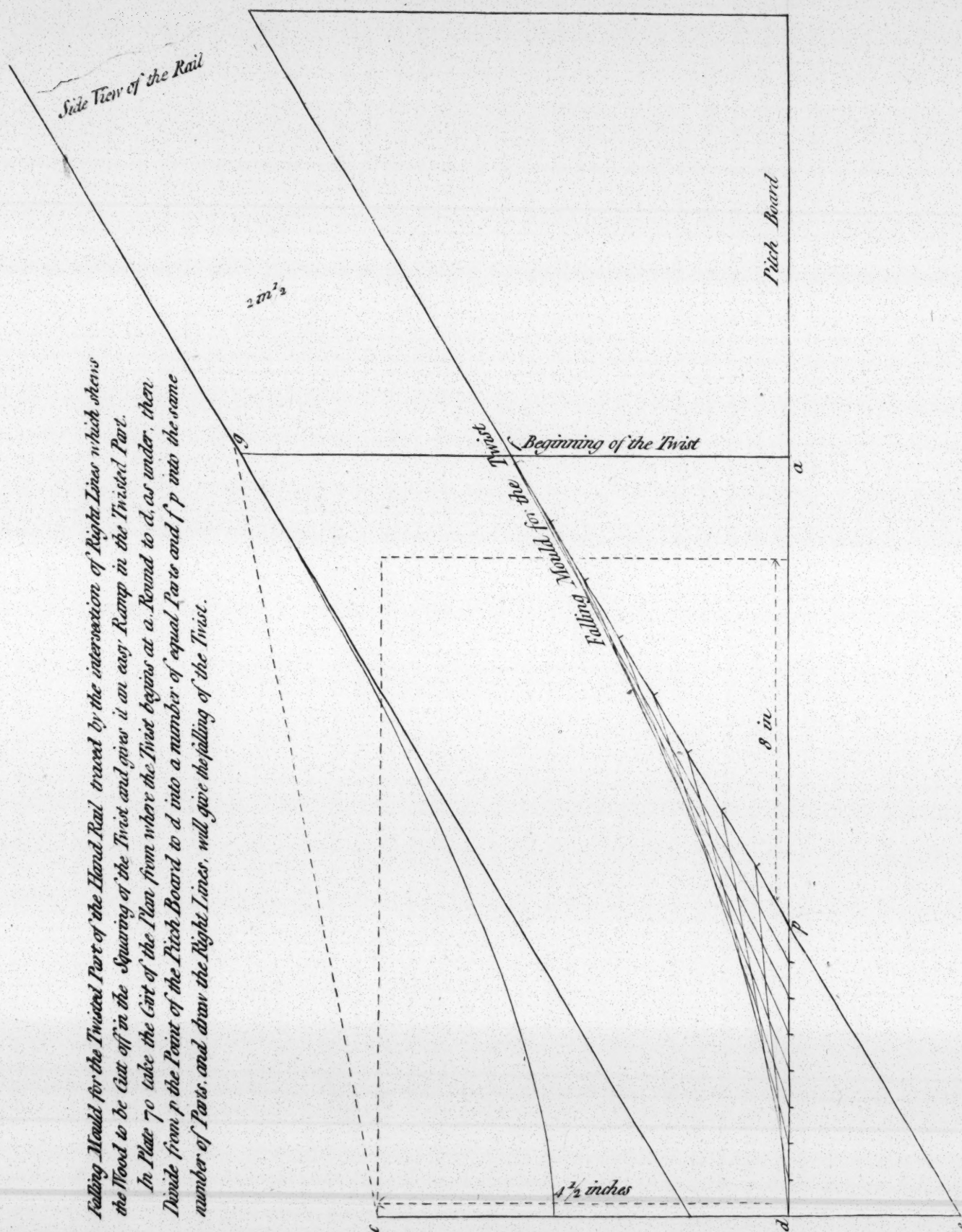




Side View of the Rail

Felling Would for the Twisted Part of the Hard Rail travel by the intersection of Right Lines which shows the Wood to be Cut off in the Squaring of the Twist and gives it an easy Ramp in the Twisted Part.

In Plate 70 take the Girt of the Plan from where the Twist begins at a Round to d, as under, then Divide from p the Point of the Pitch Board to d into a number of equal Parts and f p into the same number of Parts, and draw the Right Lines, will give the falling of the Twist.

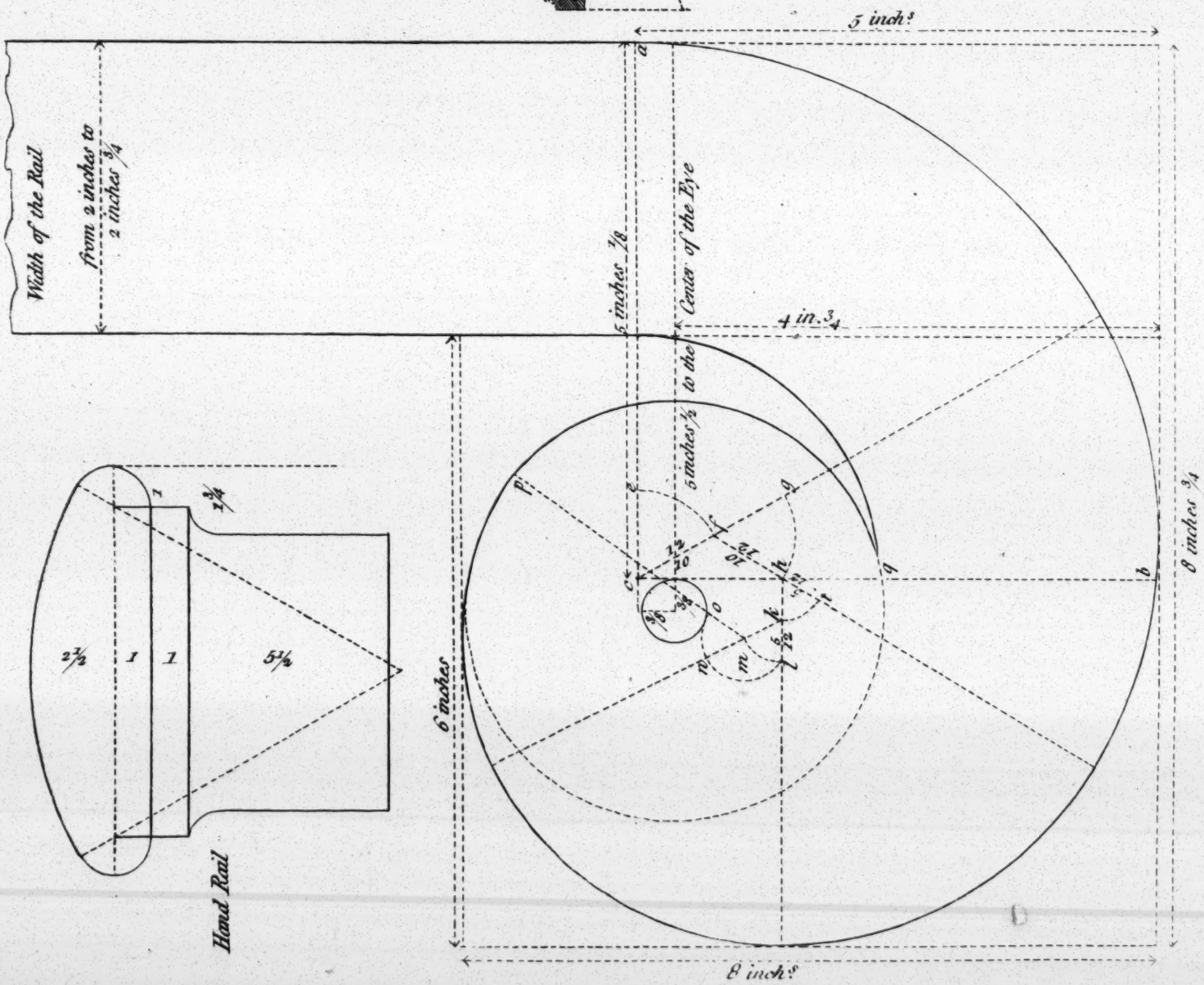


The Twist Rail with its Measures exactly figured.

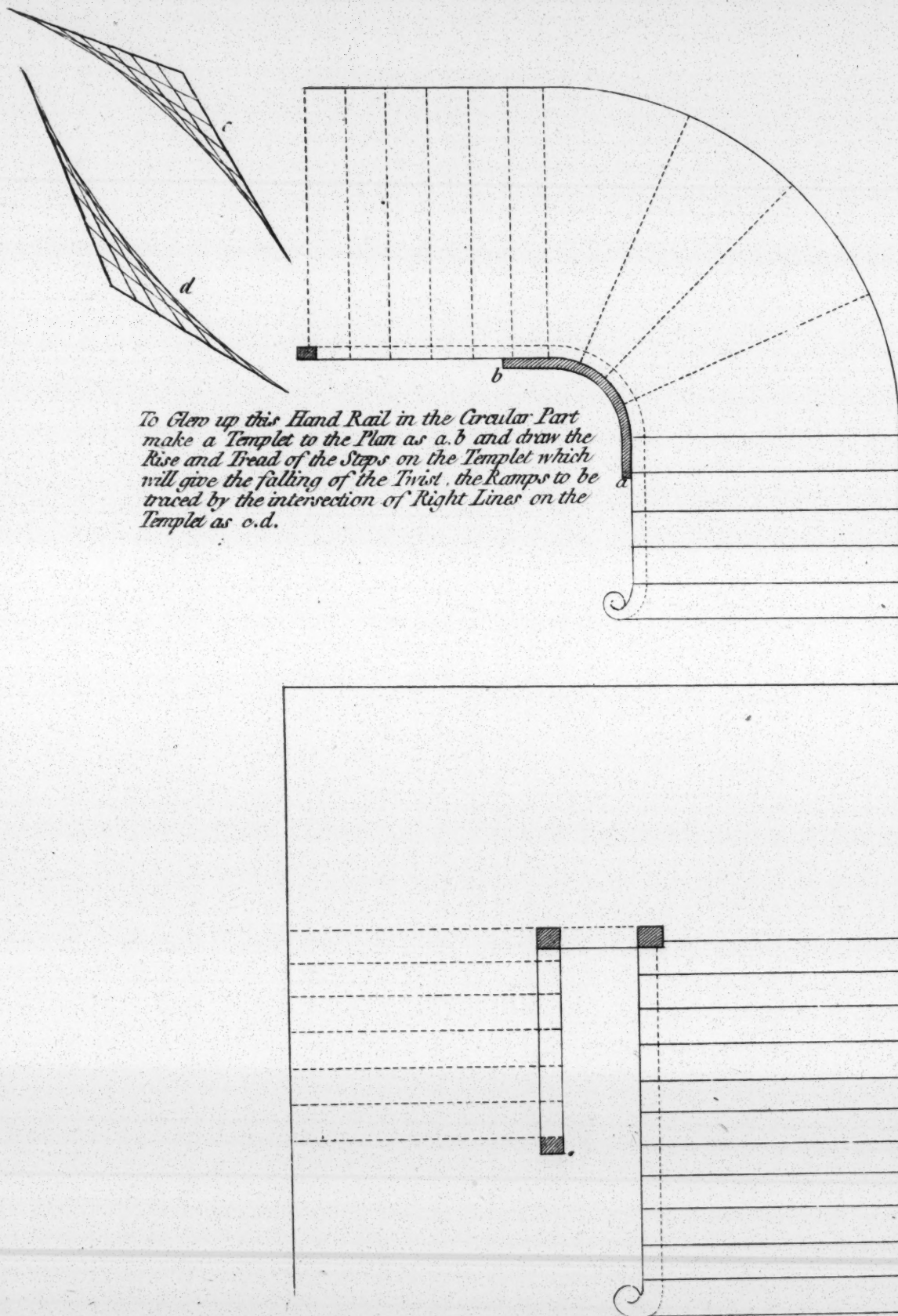
Plate LXXII.

The diagram shows a cross-section of a twist rail, which is a square rail with a twisted profile. The central square has a side length of 3 feet. The rail is composed of four quadrants, each with a different profile. The top-left quadrant has a curved outer edge with a radius of 2 feet 10 inches and a straight outer edge of 3 feet 3 inches. The top-right quadrant has a straight outer edge of 3 feet 3 inches and a curved outer edge with a radius of 3 feet. The bottom-left quadrant has a curved outer edge with a radius of 3 feet 9 inches and a straight outer edge of 3 feet 3 inches. The bottom-right quadrant has a straight outer edge of 3 feet 3 inches and a curved outer edge with a radius of 3 feet 9 inches. The central square is divided into four smaller squares by dashed lines, each with a side length of 3 feet. The entire rail is shown within a square frame with a side length of 6 feet 6 inches.

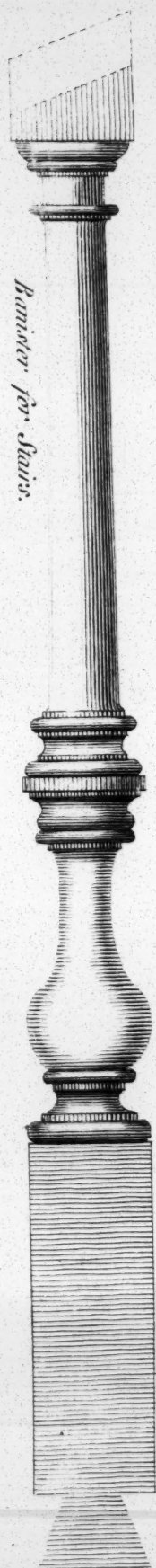
Plate LXXII.



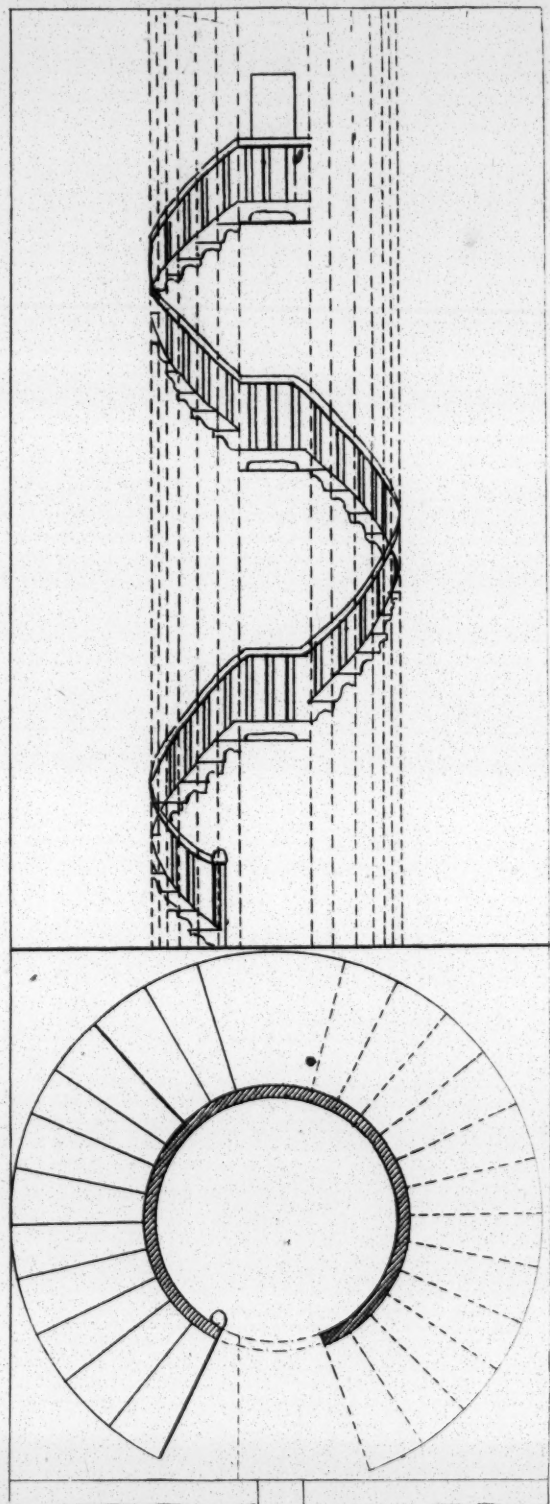
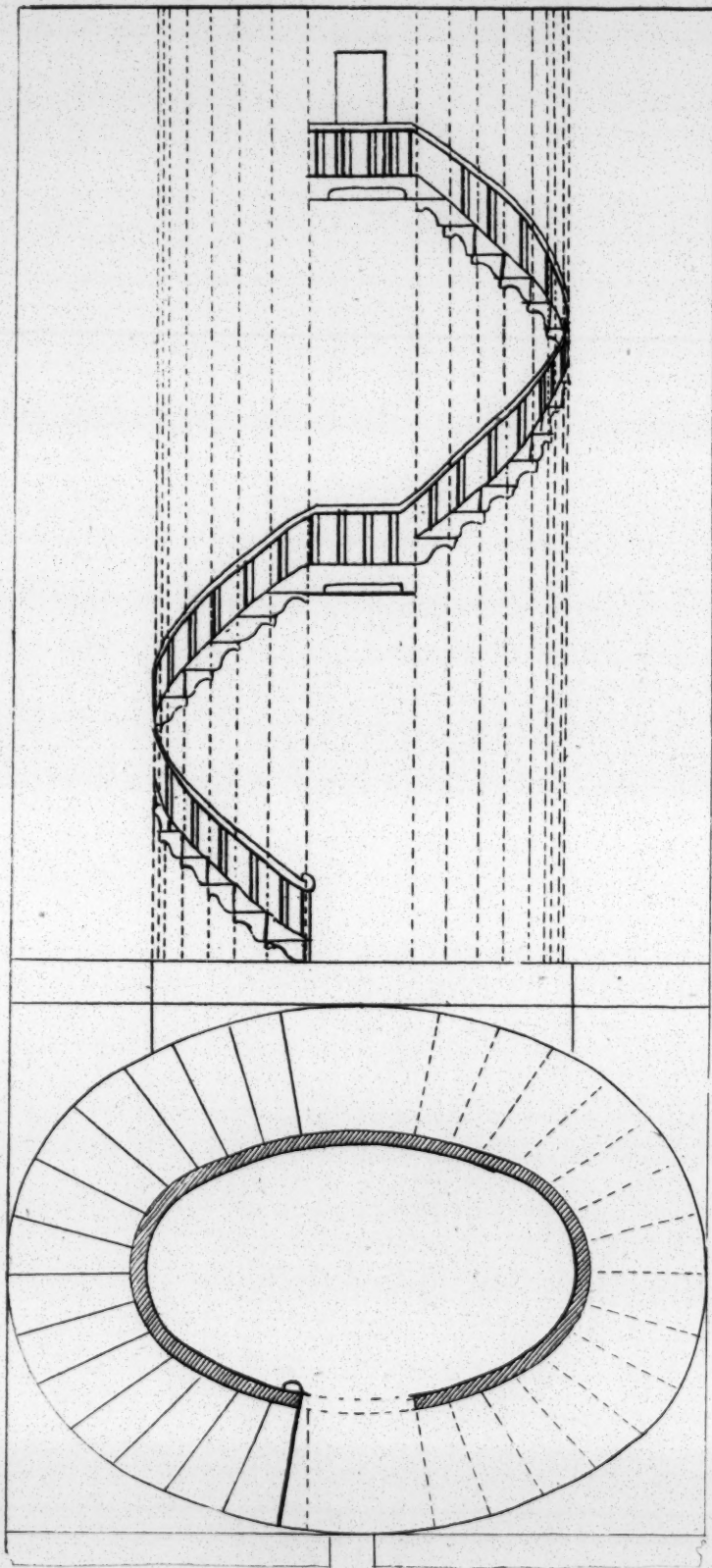
Two Plans for Stair Cases.



To Glue up this Hand Rail in the Circular Part make a Templet to the Plan as a.b and draw the Rise and Tread of the Steps on the Templet which will give the falling of the Twist. the Ramps to be traced by the intersection of Right Lines on the Templet as c.d.



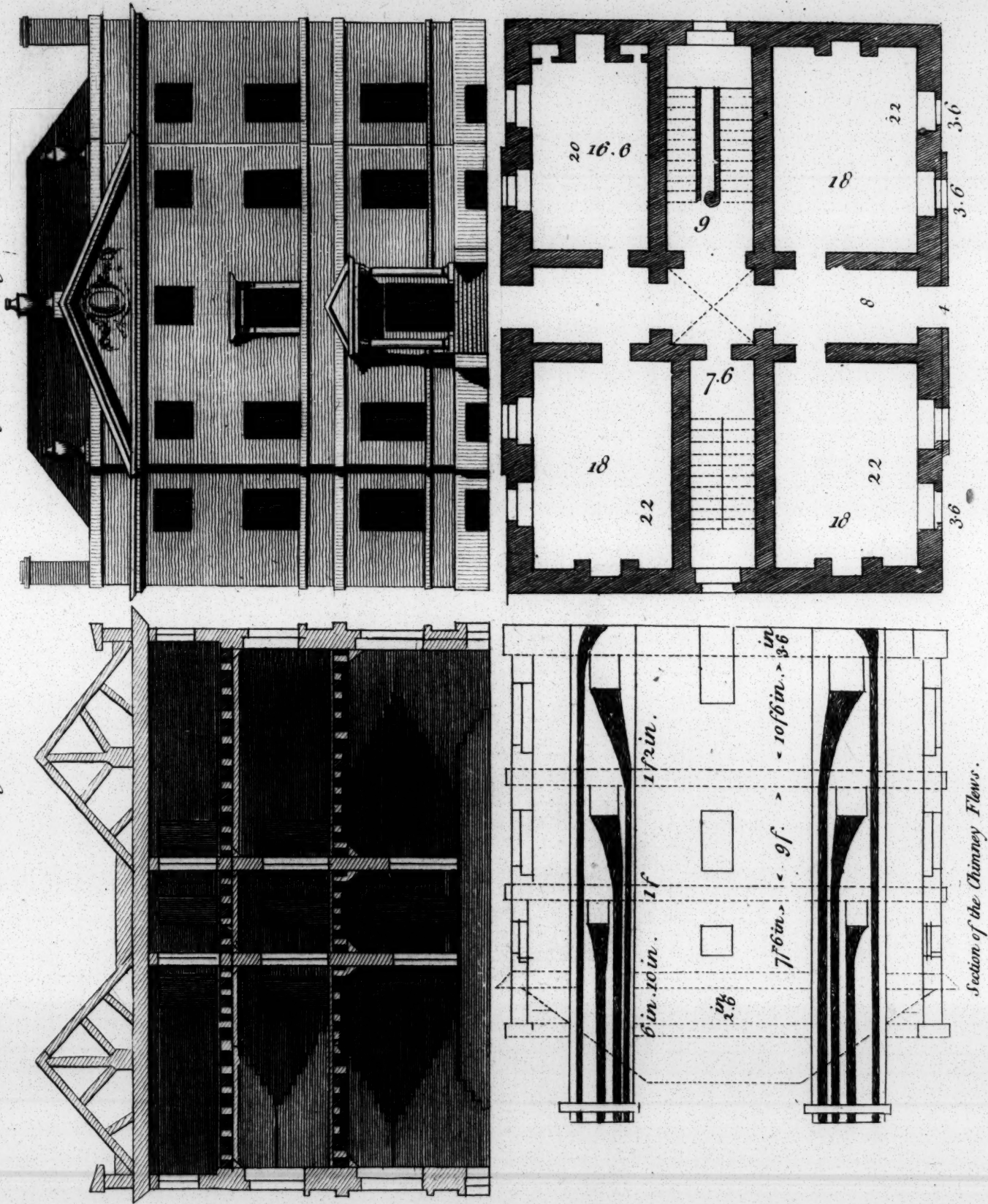
Plan & Elevation of a Circular & Oval Stair Case. Plate LXXIV.



*To be lighted by a Dome or Cone Lanthorn at the top, if placed in the middle of a Building. If on the outside may be lighted by Windows in the Wall at each landing.
To make the Hand-rail make a Templet or Cylinder to the well hole or open of the Rail, draw the tread & rise of each Step on the Cylinder, and that will give the falling of the Rail which is to be glowed in thickness bent round the Cylinder, then the Rail will come off ready squared, this is a very sure way to make the Rail.*

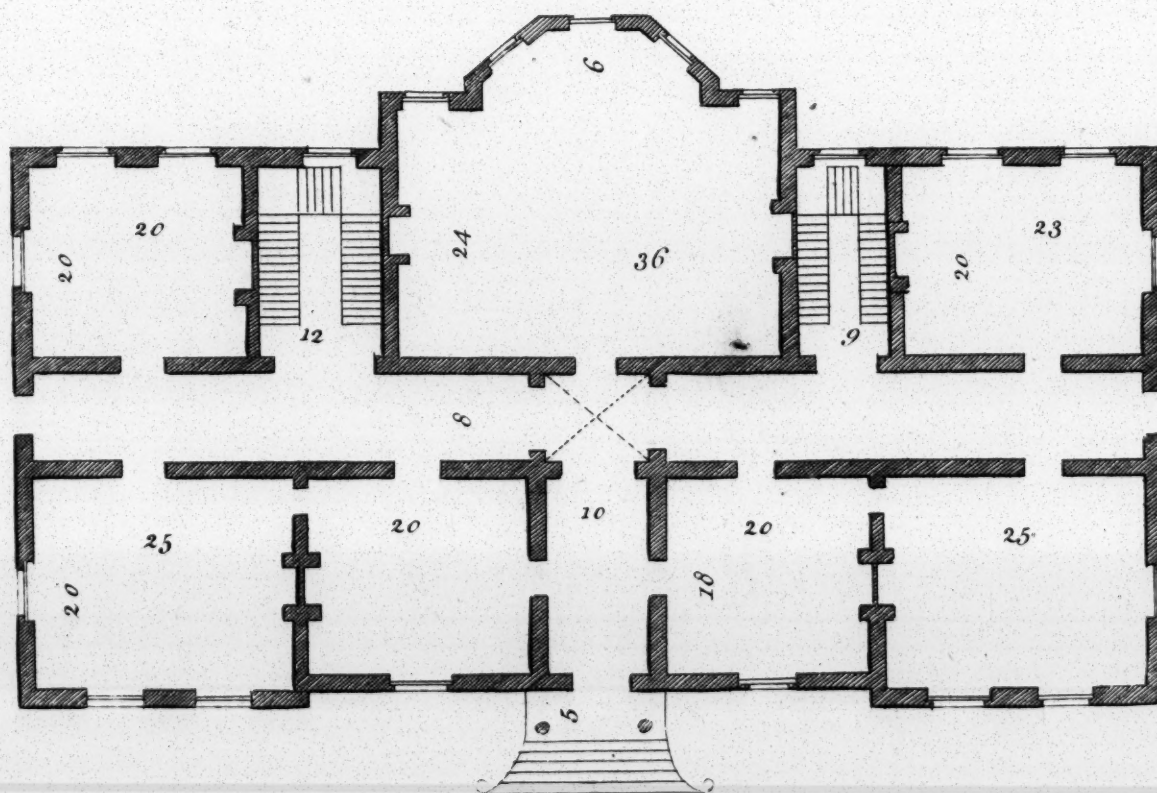
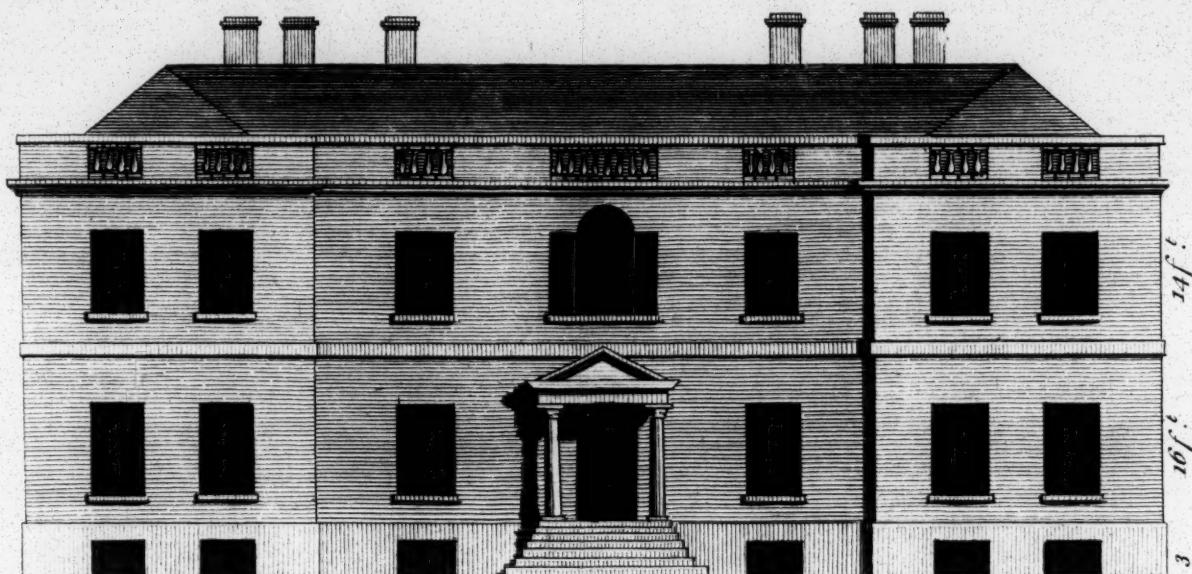


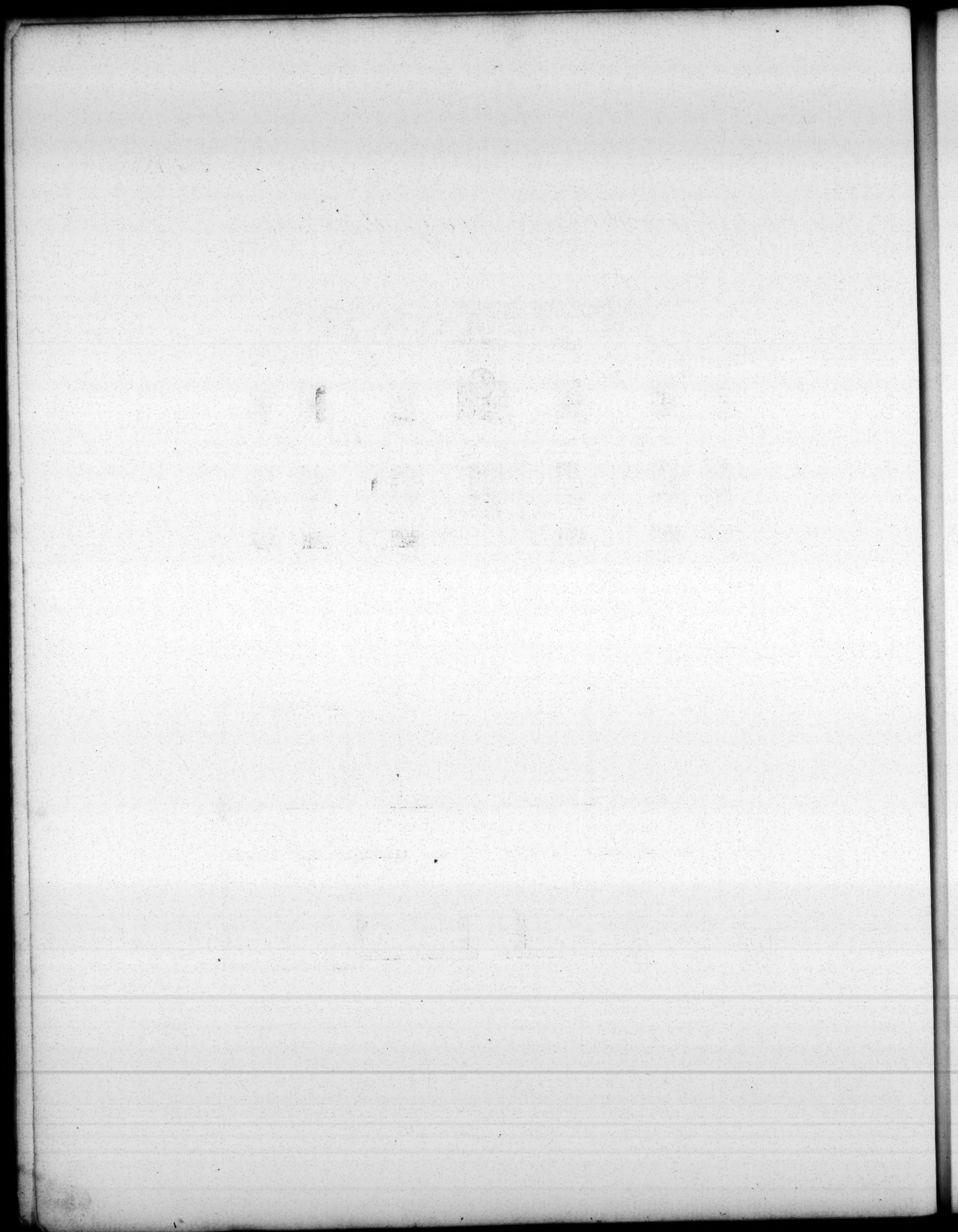
Plan, Elevation & Section of a Gentleman's House, the Offices being in the Basement Story.



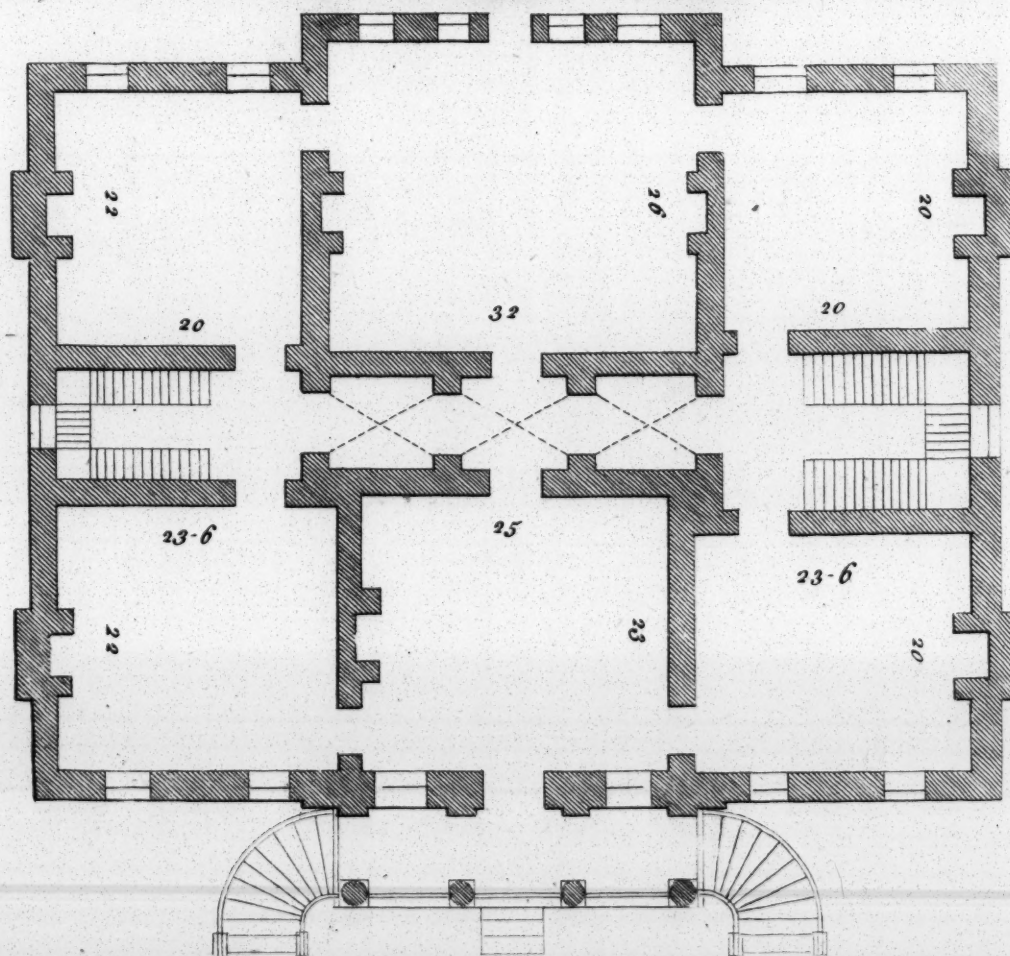
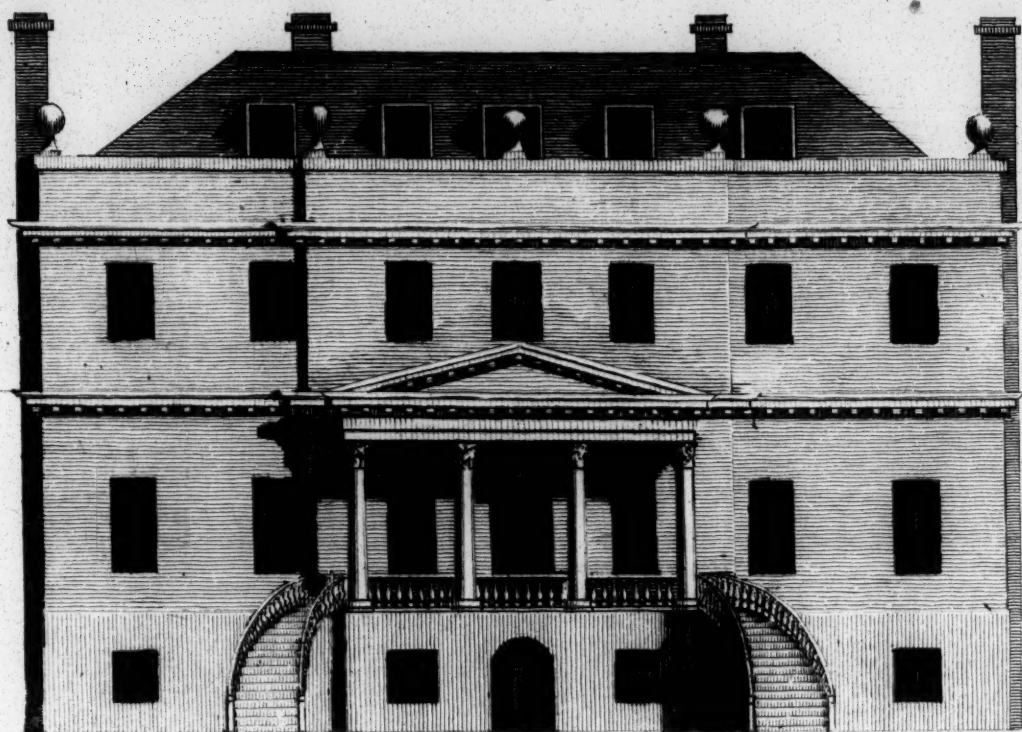


Plan and Elevation of a Gentleman's House.



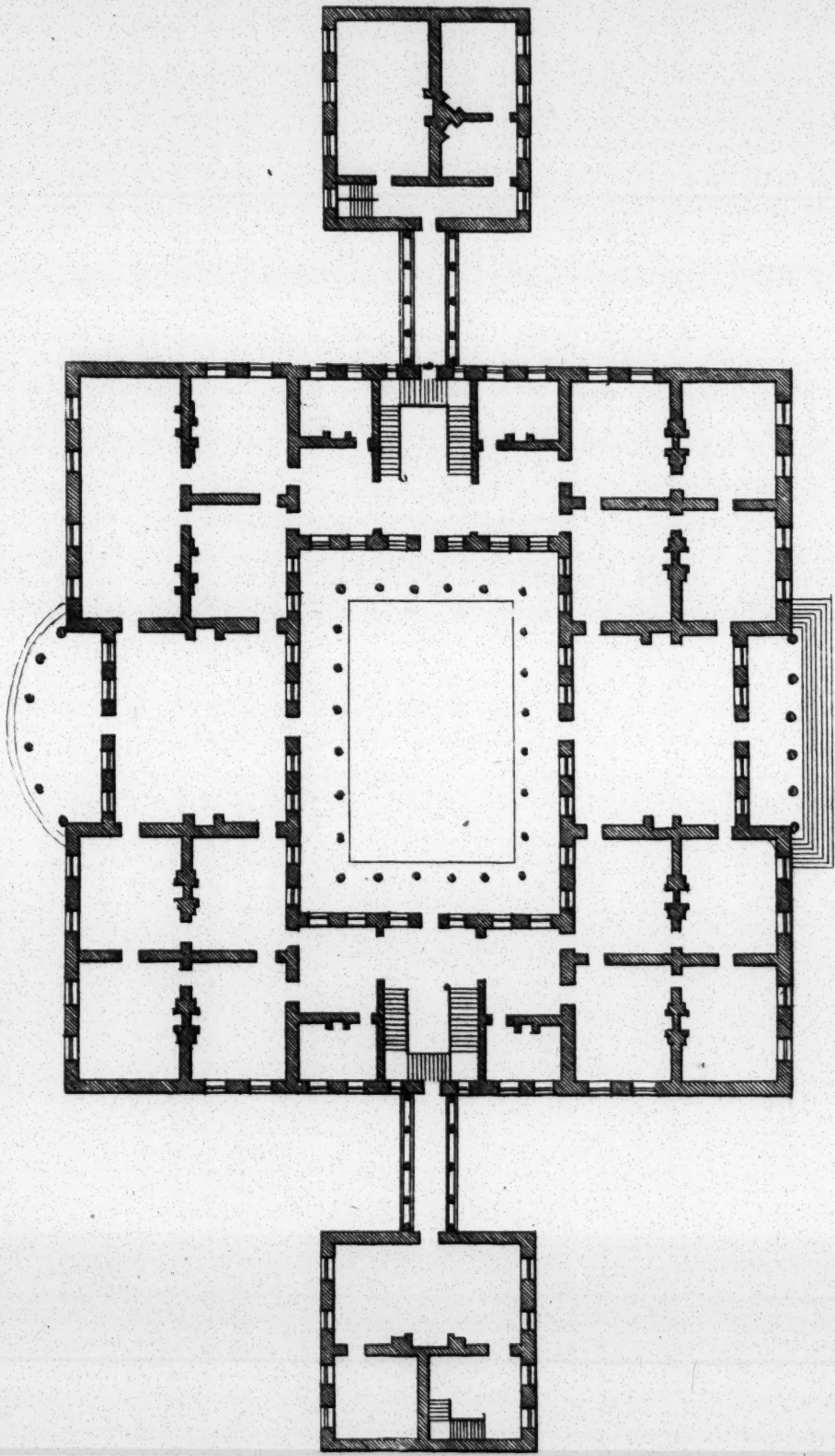
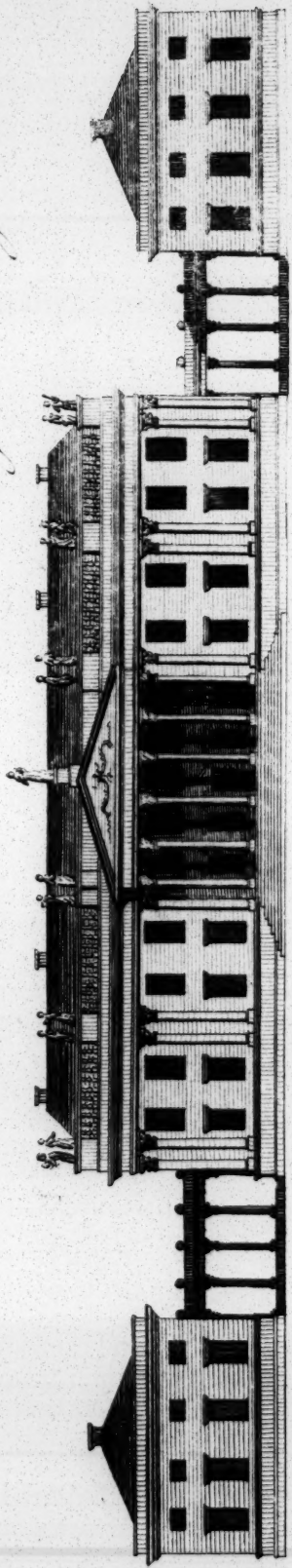


Plan & Elevation of a Gentlemans House.

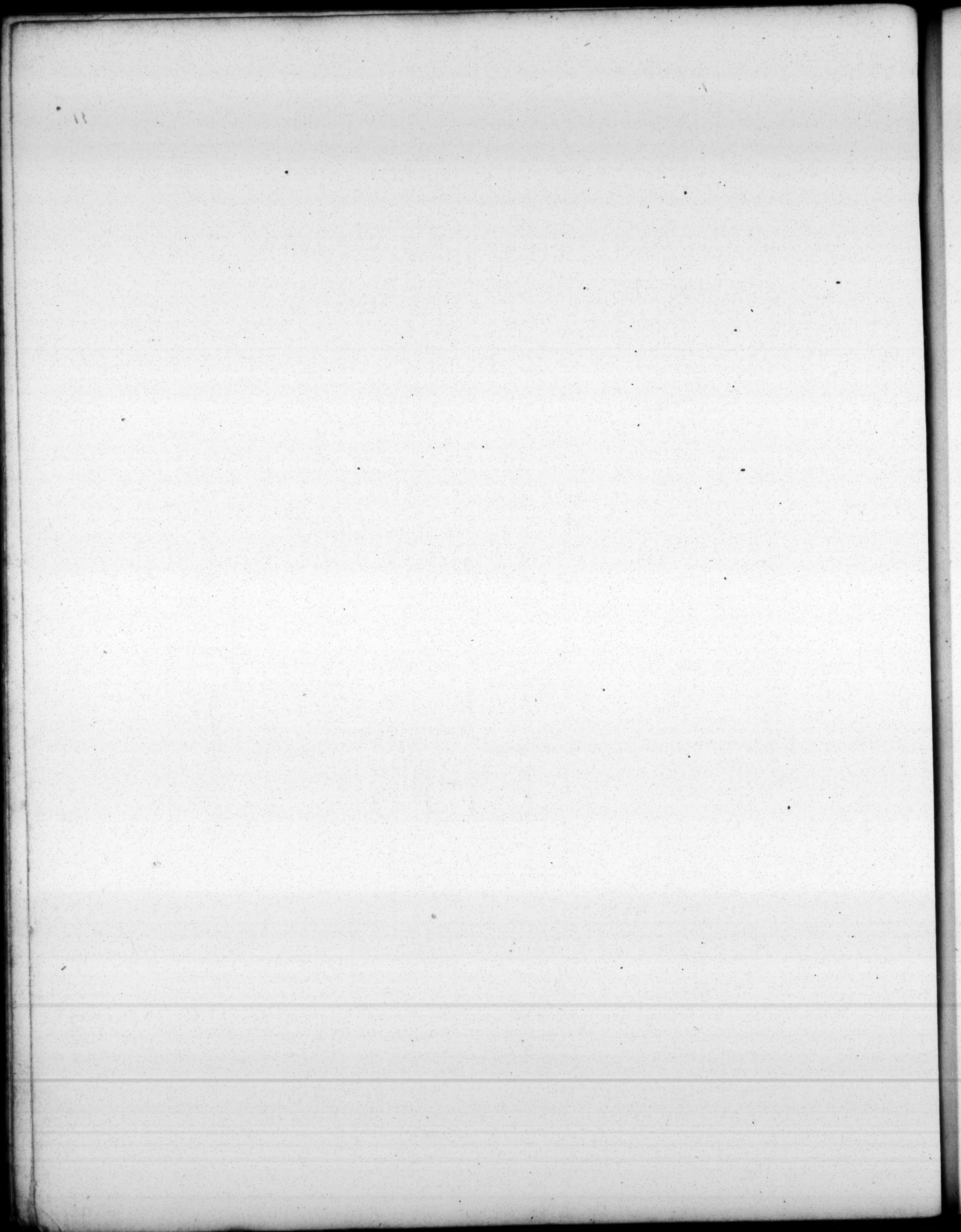


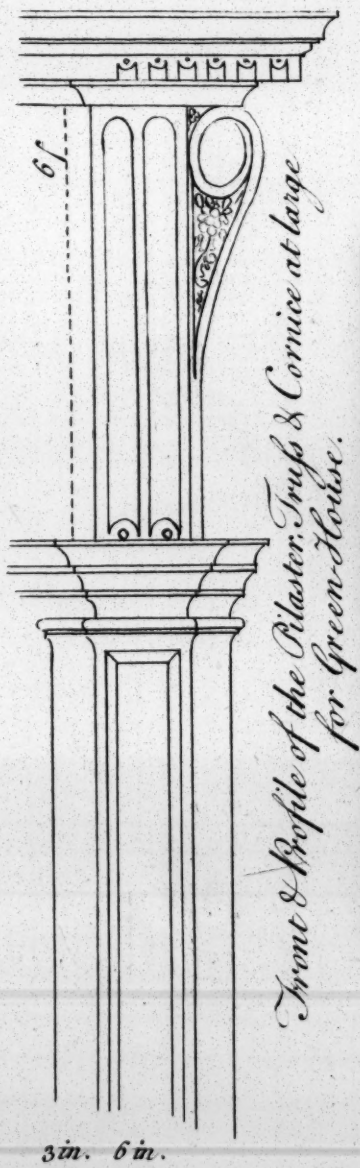


Plan & Elevation of a House for a large Family.

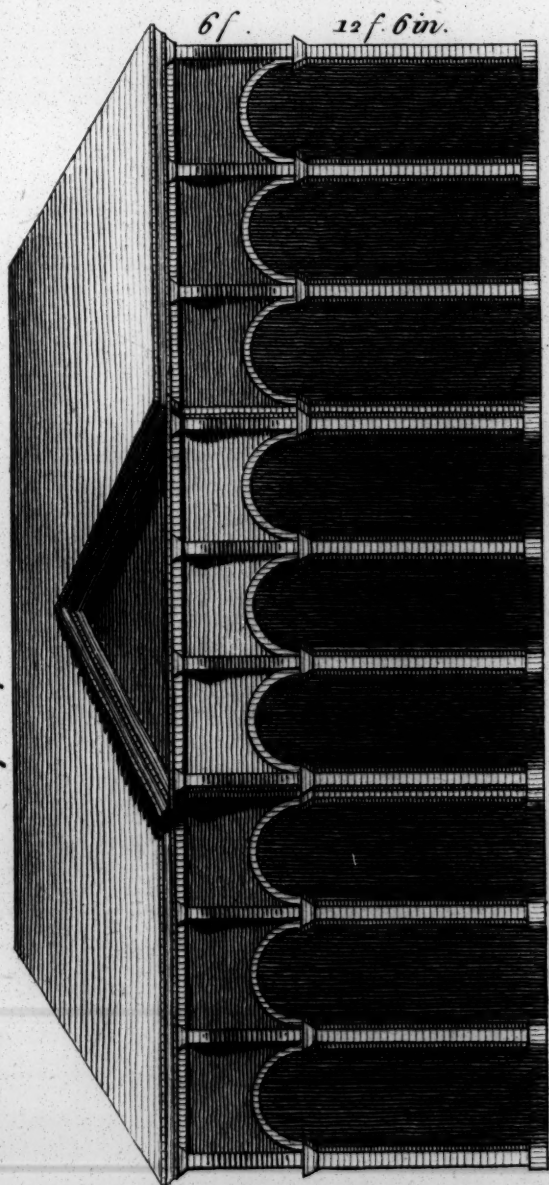


Scale: 1" = 10' 0"

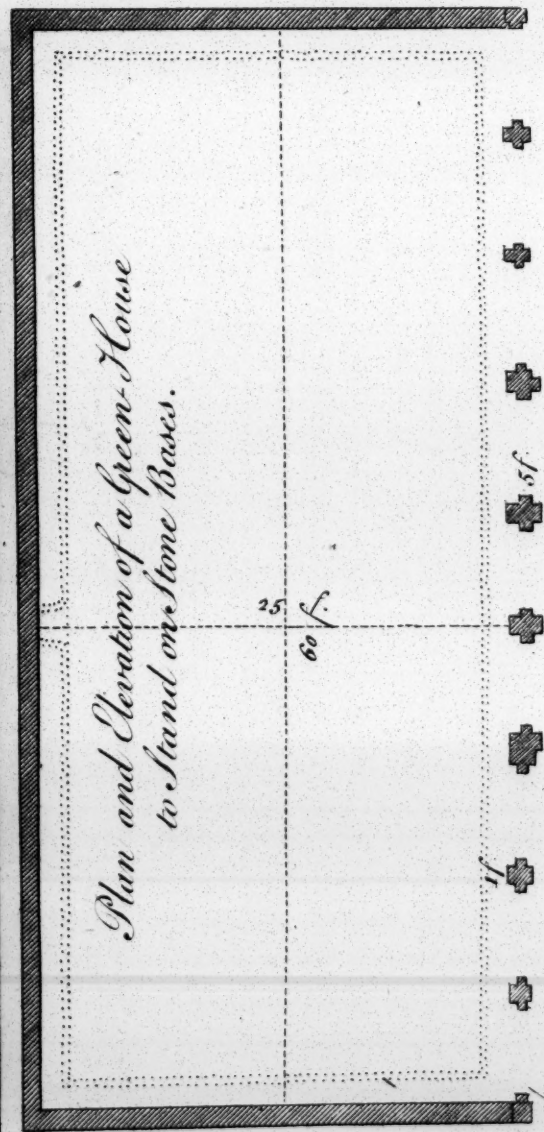




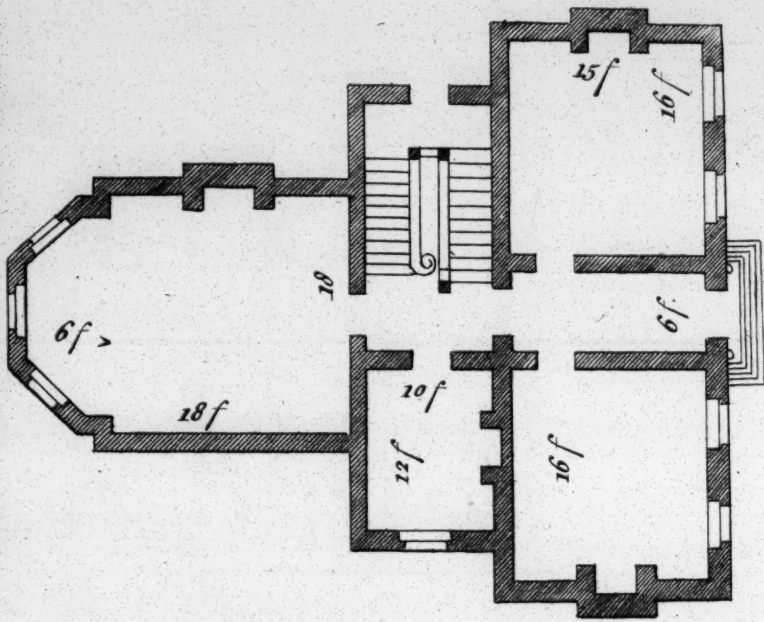
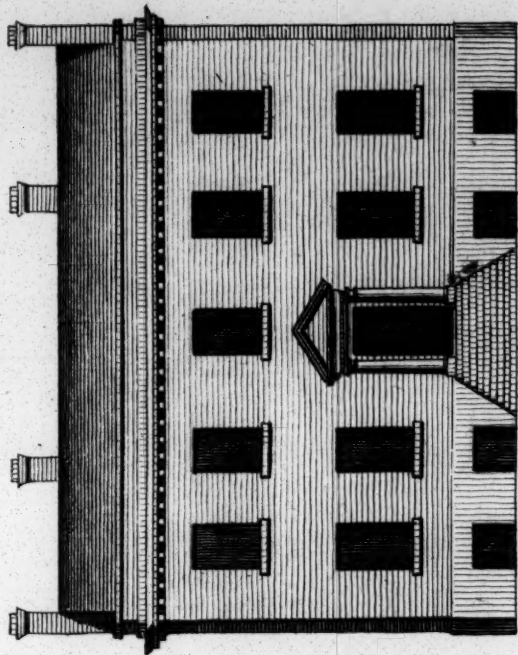
Front & Profile of the Pilaster, Truss & Cornice at large for Green-House.

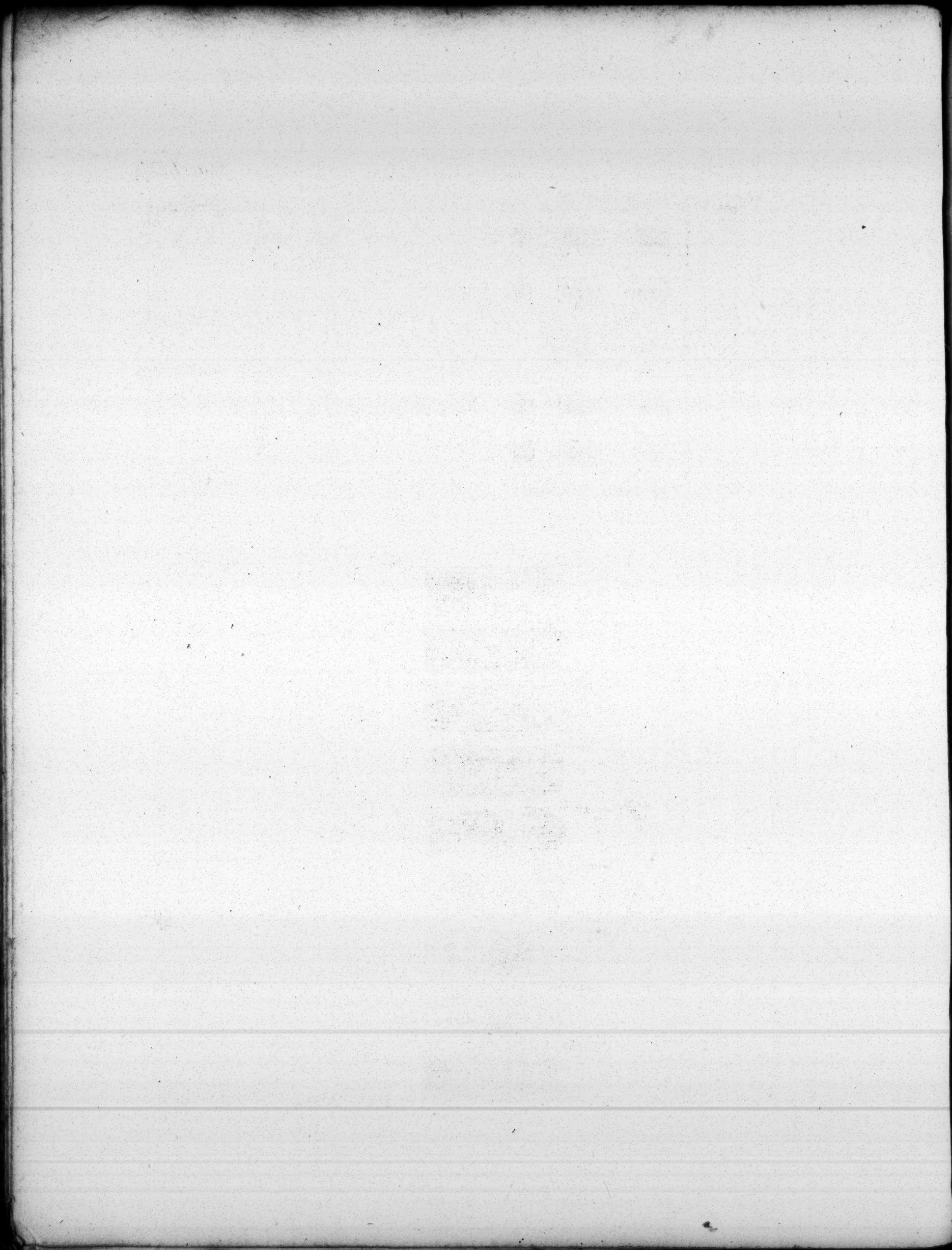


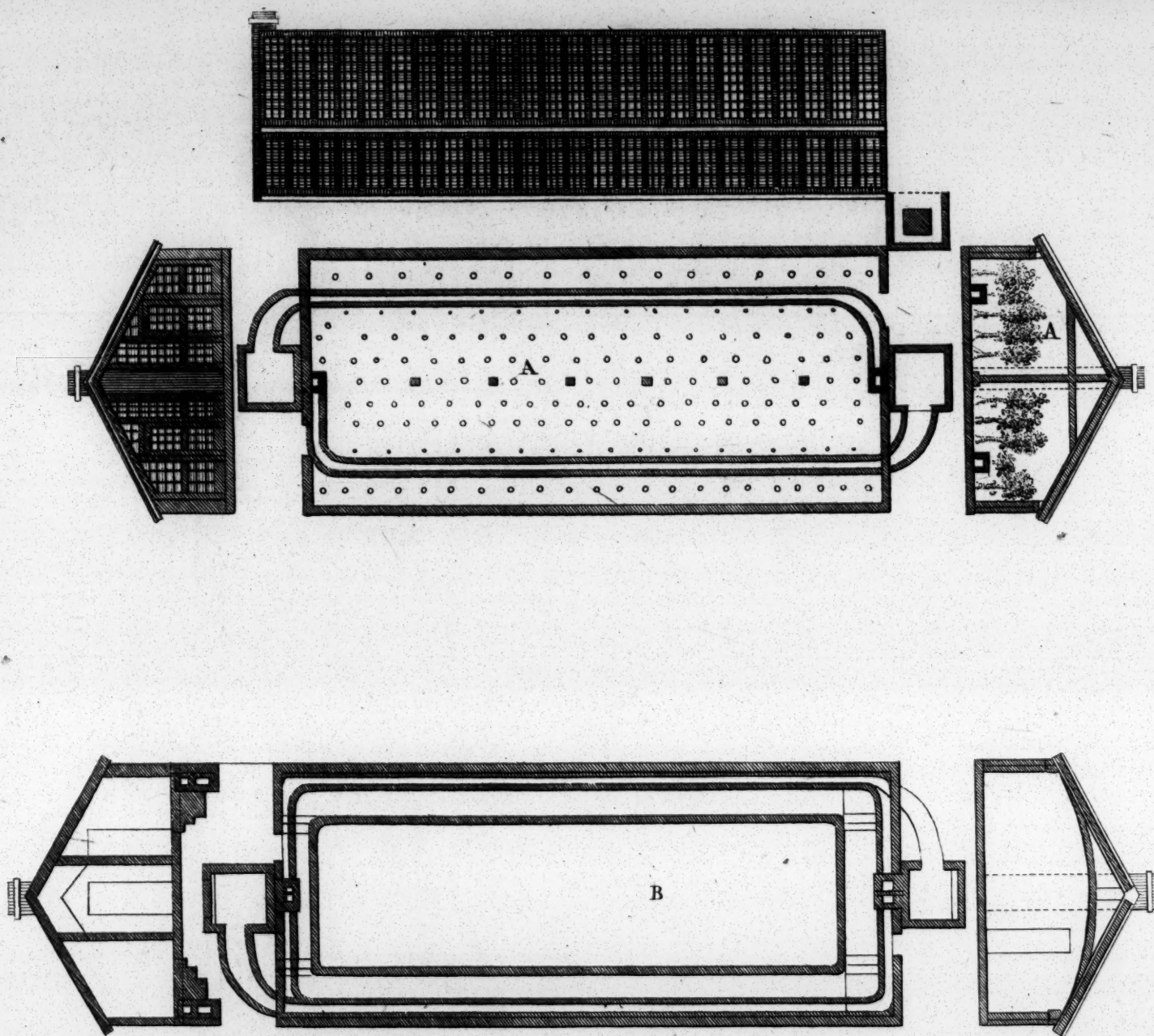
Plan and Elevation of a Green-House to stand on Stone Bases.



Plan and Elevation for a Dwelling-House.







*Two Plans, Elevations and Sections for Stoves or Hot Houses
for Pines, Fruit Trees, Strawberries &c.*

The Plan and Section A is for Fruit Trees.

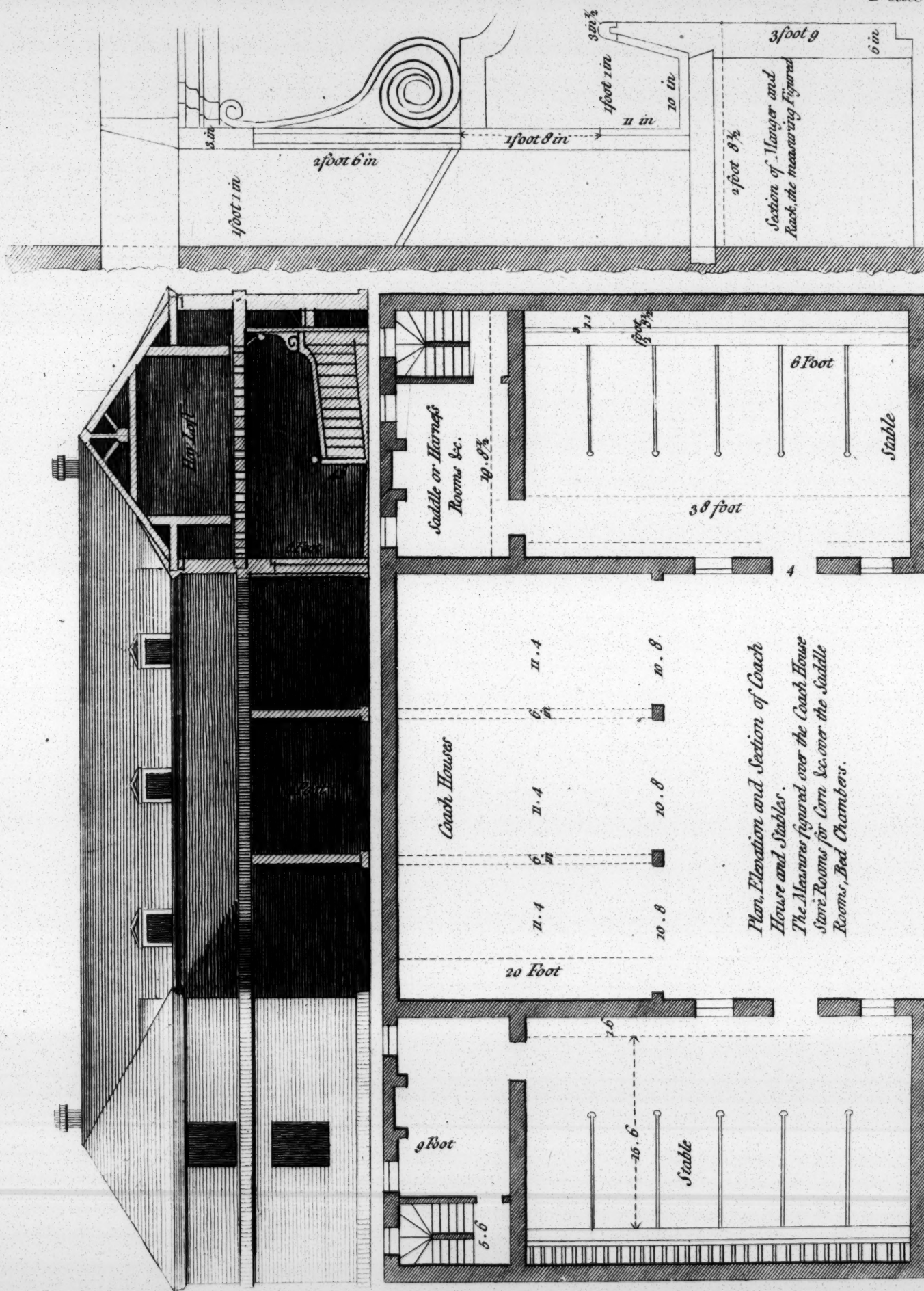
The Plan B, for Pines; the Flues in this Plan run one over another as may be seen in the Section, There are Fire Places at each End and a Walk all round.

The Flues in the Plan A. Run on the Surface and are single Flues.

The Front Roof and Ends Glass, as the Elevation of the Plan A.

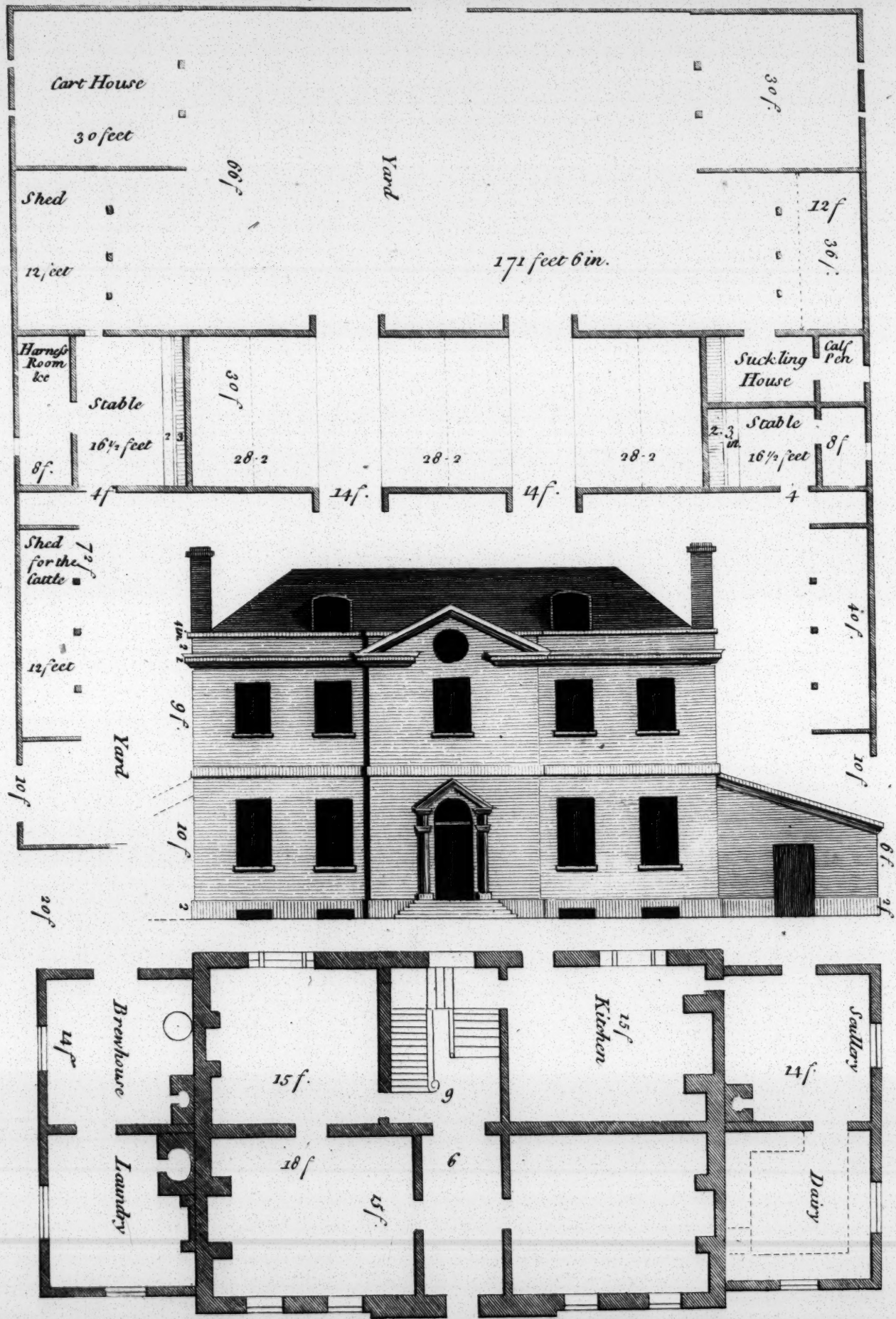
The Width of each House is 16 Feet the Length at Pleasure from 40 to 50 Feet. or more at pleasure.





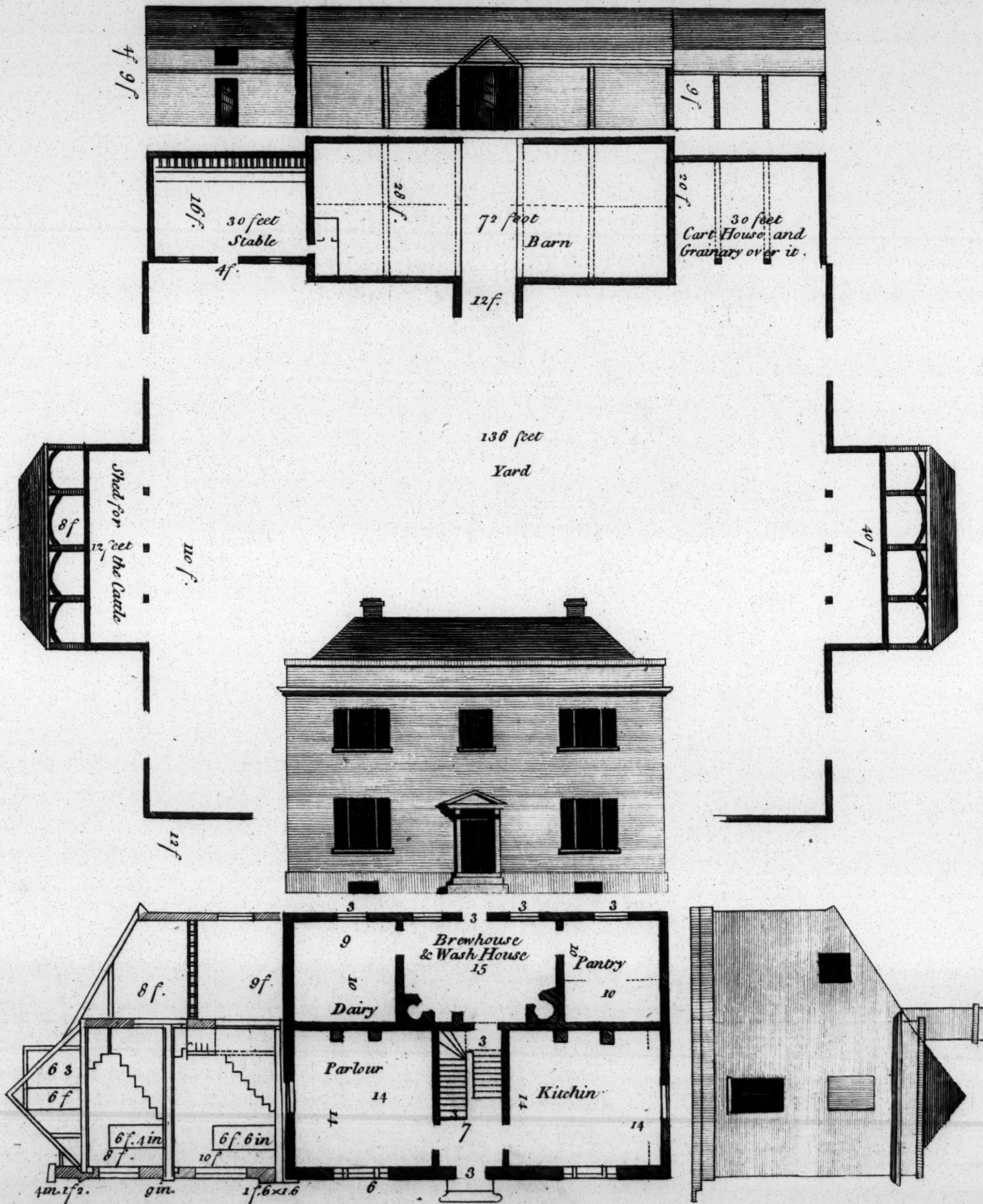


Plan & Elevation of a Farm-House, Barn, Stable, &c. Plate LXXXII.





Plan, Elevation & Section &c. of a Farm-house Barns, Stables &c. Plate LXXXIII.





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